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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:06:33 ; Search time 32 Seconds
(without alignments)
607,956 Million cell updates/sec

Title: US-09-886-856-2

Perfect score: 787
Sequence: 1 PALPEDGSGGAPPPGHFKDP.....GPKTGGQKAILFLPMSSANS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :
1: /SID52/gcgdata/geneseq/geneseq-emb1/AA1980.DAT.*
2: /SID52/gcgdata/geneseq/geneseq-emb1/AA1981.DAT.*
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21: /SID52/gcgdata/geneseq/geneseq-emb1/AA2000.DAT.*
22: /SID52/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*
23: /SID52/gcgdata/geneseq/geneseq-emb1/AA2002.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match Length | DB ID | Description |
|------------|-------|--------------------|--------|--------------------|
| 1 | 787 | 100.0 | 146 8 | Basic fibroblast g |
| 2 | 787 | 100.0 | 146 8 | Bovine basic FGF |
| 3 | 787 | 100.0 | 146 13 | Mammalian basic FG |
| 4 | 787 | 100.0 | 146 21 | Bovine FGF-2 prote |
| 5 | 787 | 100.0 | 146 21 | Recombinant bovine |
| 6 | 787 | 100.0 | 146 22 | Bovine fibroblast |
| 7 | 787 | 100.0 | 146 22 | Bovine fibroblast |
| 8 | 787 | 100.0 | 146 23 | Bovine fibroblast |
| 9 | 787 | 100.0 | 147 9 | Sequence of manufa |
| 10 | 787 | 100.0 | 147 10 | Bovine basic fibro |

| | | | | |
|----|-----|-------|--------|----------|
| 11 | 787 | 100.0 | 155 8 | AAp70671 |
| 12 | 787 | 100.0 | 155 18 | AAW20029 |
| 13 | 787 | 100.0 | 155 22 | AAE11975 |
| 14 | 787 | 100.0 | 155 23 | AAE21686 |
| 15 | 787 | 100.0 | 155 23 | AAO12080 |
| 16 | 787 | 100.0 | 273 22 | AAH49978 |
| 17 | 776 | 98.6 | 146 9 | AAp82579 |
| 18 | 776 | 98.6 | 146 13 | AAE25423 |
| 19 | 776 | 98.6 | 146 21 | AAH7847 |
| 20 | 776 | 98.6 | 146 22 | AAE11974 |
| 21 | 776 | 98.6 | 146 22 | AAE62612 |
| 22 | 776 | 98.6 | 146 23 | AAE21683 |
| 23 | 776 | 98.6 | 146 23 | AAU12079 |
| 24 | 776 | 98.6 | 148 13 | AAE22233 |
| 25 | 776 | 98.6 | 153 16 | AAE11414 |
| 26 | 776 | 98.6 | 154 16 | AAE11413 |
| 27 | 776 | 98.6 | 154 17 | AAE89473 |
| 28 | 776 | 98.6 | 154 23 | ABH09967 |
| 29 | 776 | 98.6 | 154 23 | ABH83829 |
| 30 | 776 | 98.6 | 155 8 | AAp70301 |
| 31 | 776 | 98.6 | 155 10 | AAE94038 |
| 32 | 776 | 98.6 | 155 11 | AAE05314 |
| 33 | 776 | 98.6 | 155 13 | AAE22232 |
| 34 | 776 | 98.6 | 155 14 | AAE40159 |
| 35 | 776 | 98.6 | 155 15 | AAE33270 |
| 36 | 776 | 98.6 | 155 16 | AAE80777 |
| 37 | 776 | 98.6 | 155 16 | AAE70204 |
| 38 | 776 | 98.6 | 155 16 | AAE70823 |
| 39 | 776 | 98.6 | 155 18 | AAE33338 |
| 40 | 776 | 98.6 | 155 18 | AAE19595 |
| 41 | 776 | 98.6 | 155 19 | AAE05456 |
| 42 | 776 | 98.6 | 155 19 | AAE75712 |
| 43 | 776 | 98.6 | 155 19 | AAE1386 |
| 44 | 776 | 98.6 | 155 19 | AAE71379 |
| 45 | 776 | 98.6 | 155 19 | AAE53023 |

ALIGNMENTS

RESULT 1
AAP71145
ID AAP71145 standard; protein: 146 AA.
AC AAP71145;
XX 11-MAR-1991 (first entry)
DT
DE Basic fibroblast growth factor.
RW Mitogenic; angiogenic; bFGF.
OS Bos taurus.
PN W08607595-A.
XX 31-DEC-1986.
PD
XX 18-JUN-1986; 86WO-US01318.
PF
XX 20-JUN-1985; 85US-0747154.
PR
XX (SALK) SALK INST FOR BIOL STUD.
PA
XX Esch Fs, Bohlen P, Baird A, Gospodarowicz DJ, Ling NCK;
PI WPL, 1987-007193/01.
DR
XX pure basic fibroblast growth factor - produced by inserting
PT synthesised DNA chain into cloning vector and producing
PT transformed cell lines.
XX
PS Claim 1; Page 24; 29pp; English.

Sequence of bovine
Recombinant bovine
Bovine fibroblast
Bovine fibroblast
Bovine 155 amino a
3-D structure dete
Human basic fibrob
bFGF derivative.
Human FGF-2 protel
Human fibroblast g
Human basic insul1
Human fibroblast g
Human fibroblast g
bFGF truncated at
Human basic fibrob
Human basic fibrob
Human basic fibrob
Human basic fibrob
Human basic fibrob
Human bFGF related
Sequence of human
Human basic fibrob
Human basic fibrob
bFGF truncated at
Human bFGF peptide
glu3.5 hbFGF. Hom
Fibroblast growth
Human bFGF. Homo
FGF-2. Homo sapie
Human fibronectin
Biologically activ
Fibronectin recept
Fibroblast growth
SSV mutant of fib
18 Kda form of fib
Fibroblast growth

Nichols C.
09/886856
Seq. IDs 244 Page 1

XX The purified bFGF may be easily produced from an expression system
 CC transformed by a vector carrying the sequence encoding the
 CC polypeptide. The bFGF peptides are mitogenic for a wide variety of
 CC cultured diploid cells, may be used in promoting in vitro growth of
 CC cell lines, and in eliciting an angiogenic response and thus in
 CC therapeutic applications.

XX Sequence 146 AA:

Query Match 100.0%; Score 787; DB 8; Length 146;
 Best Local Similarity 100.0%; Pred. No. 6e-78;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDKRLCYCKNGGFLRIHPDGRVDGVRKSDPHIKIQLOAEER 60
 DB 1 PALPEDGSGAFPFGHFKDKRLCYCKNGGFLRIHPDGRVDGVRKSDPHIKIQLOAEER 60
 QY 61 GVSISIKVCANRILAMKEDRLASKCVTDECFEERLESNNNTYRSRKYSSWYALKR 120
 DB 61 GVSISIKVCANRILAMKEDRLASKCVTDECFEERLESNNNTYRSRKYSSWYALKR 120
 QY 121 TGQYKLGPKTGPQKALFLPMSAKS 146
 DB 121 TGQYKLGPKTGPQKALFLPMSAKS 146

RESULT 2
 AAR25943

ID AAR25943 standard; peptide; 146 AA.

XX AAR25943;

DT 25-JAN-1993 (first entry)

DE Bovine basic FGF.

XX Fibroblast growth factor; fragment; analogue; antagonist; growth;

KM vasoproliferation; diabetic retinopathy; glomerulonephritis;

KW chondrosarcoma; adrenal vascularisation; neovascularisation;

KM melanomas; hst/K53.

XX Bos taurus.

OS US5132408-A.

PN 21-JUL-1992.

PD 14-NOV-1988; 88US-0270225.

PR 14-NOV-1988; 88US-0270225.

XX (SALK) SALK INST BIOLOGICAL STUDIES.

PA Baird AJ, Ling NC;

PI WPI; 1992-267992/32.

DR New polypeptide(s) as fibroblast growth factor antagonists - for

XX treatment of chondrosarcoma, diabetic retinopathy and

PT glomerulonephritis and for diagnosis

PS Disclosure; Page 1; 12pp; English.

XX The peptide is a bovine basic fibroblast growth factor. Truncated
 CC analogues of this peptide (esp. comprising residues 24-68) can be
 CC used as bFGF antagonists, and can therefore interact or inhibit the
 CC bFGF receptor and modulate endothelial and other cell growth. The
 CC peptide analogues can be used in human and veterinary medicine for
 CC diagnosing and treating vasoproliferative diseases of the eye (e.g.
 CC diabetic retinopathies), kidney (e.g. glomerulonephritis), tumours
 CC (e.g. chondrosarcoma), adrenal vascularisation and to inhibit
 CC neovascularisation of solid tumours. The peptide analogue should

CC also be effective in combating the growth of human melanomas and
 CC other melanocytes and the growth promotion of certain related
 CC oncogenes such as hst/K53. See also AAR25944-5.

XX Sequence 146 AA:

Query Match 100.0%; Score 787; DB 13; Length 146;
 Best Local Similarity 100.0%; Pred. No. 6e-78;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDKRLCYCKNGGFLRIHPDGRVDGVRKSDPHIKIQLOAEER 60
 DB 1 PALPEDGSGAFPFGHFKDKRLCYCKNGGFLRIHPDGRVDGVRKSDPHIKIQLOAEER 60
 QY 61 GVSISIKVCANRILAMKEDRLASKCVTDECFEERLESNNNTYRSRKYSSWYALKR 120
 DB 61 GVSISIKVCANRILAMKEDRLASKCVTDECFEERLESNNNTYRSRKYSSWYALKR 120
 QY 121 TGQYKLGPKTGPQKALFLPMSAKS 146
 DB 121 TGQYKLGPKTGPQKALFLPMSAKS 146

RESULT 3
 AAR27717

ID AAR27717 standard; protein; 146 AA.

XX AAR27717;

DT 16-MAR-1993 (first entry)

DE Mammalian basic FGF.

XX Basic fibroblast growth factor; FGF; cation exchange HPLC;

KM reverse-phase HPLC; homogeneity; recombinant DNA; disulphide bond;

KW non-toxic salt; pharmaceutical; diagnostic; therapeutic;

KM in vitro cell proliferation; nerve regeneration; wound healing.

XX Bos taurus.

OS US5155214-A.

PN 13-OCT-1992.

PD 05-MAR-1984; 84US-0586518.

PR 05-MAR-1984; 84US-0586518.

PR 09-NOV-1984; 84US-0670160.

PR 20-JUN-1985; 85US-0747154.

PR 10-DEC-1986; 86US-0940524.

PR 31-DEC-1987; 87US-0139953.

PR 08-JAN-1990; 90US-0462126.

XX (SALK) SALK INST BIOLOGICAL STUDIES.

PA Baird AJ, Bohlen P, Esch FS, Gospodarowicz D, Ling NC;

PI WPI; 1992-365559/44.

DR Purified mammalian basic fibroblast growth factor - produced by

XX recombinant method, is useful e.g. for promoting wound healing

PS Claim 1; Column 24; 24pp; English.

XX This substantially pure protein was purified from partially purified
 CC basic fibroblast growth factor (FGF) by cation exchange HPLC and two
 CC reverse-phase HPLC steps. Having purified this protein to apparent
 CC homogeneity the amino acid sequence can be determined and pure basic
 CC FGF may be synthesised using recombinant DNA techniques (see also
 CC AA029741). This peptide is biologically active and exhibits either no
 CC or random disulphide bonding within the molecule. This protein, an
 CC analogue, a biologically active fragment, or a non-toxic salt of it
 CC may be used in a pharmaceutical composition for diagnostic or

CC therapeutic uses. This may be used in in vitro cell proliferation
 CC procedures, eg. nerve regeneration and wound healing.

XX Sequence 146 AA;

SO Query Match 100.0%; Score 787; DB 13; Length 146;
 Best Local Similarity 100.0%; Pred. No. 6e-78;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPEDGSGAPPPGHFKDPKRLCYCKNGGFFLRHPDGRVDGVRKSDPHIKQLQAEER 60
 DB 1 PALPEDGSGAPPPGHFKDPKRLCYCKNGGFFLRHPDGRVDGVRKSDPHIKQLQAEER 60
 OY 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNYNTYRSKYSWYALKR 120
 DB 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNYNTYRSKYSWYALKR 120
 OY 121 TGQYKLGPKTGPQKAILFLPMSAKS 146
 DB 121 TGQYKLGPKTGPQKAILFLPMSAKS 146

RESULT 4

AA87848
 ID AAY87848 standard; protein; 146 AA.

AC AAY87848;

XX 01-SEP-2000 (first entry)

DE Bovine FGF-2 protein.

KW FGF-2; fibroblast growth factor; cardiant; treatment; angiogenesis;
 KW coronary artery disease; myocardial infarction injury; bovine.

OS Bos taurus.

PN WO200021548-A2.

PD 20-APR-2000.

PF 13-OCT-1999; 99WO-US22936.

PR 13-OCT-1998; 98US-0104103.

PA (CHIR) CHIRON CORP.
 (WHIT/) WHITEHOUSE M J.

PI Kavanaugh WM;

DR MPI: 2000-317840/27.

DR N-PSDB; AAA39555.

PT Novel unit dose comprising fibroblast growth factor, its angiogenically
 PT active fragment or mutain for inducing cardiac angiogenesis, treating
 PT coronary artery disease and reducing post myocardial infarction injury

XX Claim 1; Page 58; 67pp; English.

XX This invention describes a novel unit dose (I), of fibroblast growth
 CC factor (FGF) comprising 0.008-6.1 mg of a mammalian FGF comprising
 CC sequence of 140 ((II) and (III)), 146 ((IV) and (V)), 205 ((VI), 266
 CC ((VII), 207 ((VIII) and (XI)), 215 ((IX), and 208 ((X) amino acids (aa),
 CC given in the specification, its angiogenically active fragment or
 CC mutain. The product of the invention has angiogenic and cardiant
 CC activity. (I) is used for treating a human patient for coronary artery
 CC disease, and inducing angiogenesis in the human heart. (I) further
 CC provides an adjunct for reducing post myocardial infarction injury in
 CC humans. The unit dose provides the human patient with a rapid and
 CC therapeutic cardiac angiogenesis sufficient to obviate surgical
 CC intervention and results in an superior increase in the treated
 CC patients's exercise tolerance time (ETT). It also provides a safe and

CC therapeutically efficacious treatment for the patients with coronary
 CC artery disease that lasts at least 6 months before a further treatment
 CC is needed. The method provides superior increase of 1.5-2 minutes in
 CC the treated patient's (ETT), compared to an increase of 30 seconds for
 CC current modes treatment. This sequence represents the bovine FGF-2
 CC protein fragment described in the method of the invention.

XX Sequence 146 AA;

SO Query Match 100.0%; Score 787; DB 21; Length 146;
 Best Local Similarity 100.0%; Pred. No. 6e-78;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPEDGSGAPPPGHFKDPKRLCYCKNGGFFLRHPDGRVDGVRKSDPHIKQLQAEER 60
 DB 1 PALPEDGSGAPPPGHFKDPKRLCYCKNGGFFLRHPDGRVDGVRKSDPHIKQLQAEER 60
 OY 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNYNTYRSKYSWYALKR 120
 DB 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNYNTYRSKYSWYALKR 120
 OY 121 TGQYKLGPKTGPQKAILFLPMSAKS 146
 DB 121 TGQYKLGPKTGPQKAILFLPMSAKS 146

RESULT 5

AA81941
 ID AAY81941 standard; Protein; 146 AA.

AC AAY81941;

XX 30-JUN-2000 (first entry)

DE Recombinant bovine FGF-2 protein sequence.

KW FGF-2; cow; fibroblast growth factor 2; angiogenesis; unstable angina;
 KW coronary artery disease; human; acute myocardial infarction; therapy.

OS Bos taurus.

PN WO200013701-A2.

PD 16-MAR-2000.

PF 27-AUG-1999; 99WO-US19770.

PR 03-SEP-1998; 98US-0145743.

PR 13-OCT-1998; 98US-0104102.

PR 13-OCT-1998; 98US-0104103.

PA (CHIR) CHIRON CORP.
 (WHIT/) WHITEHOUSE M J.

DR MPI: 2000-256860/22.

DR N-PSDB; AAA07355.

PT Composition for inducing angiogenesis or treating coronary artery
 PT disease comprises fibroblast growth factor-2 or angiogenically active
 PT fragment or mutain -

XX Claim 3; Page 58-59; 60pp; English.

XX This sequence represents a recombinant bovine fibroblast growth factor-2
 CC (FGF-2) sequence. The invention relates to a unit dose composition
 CC (I) for inducing angiogenesis in a human, comprising 0.008-7.2 mg of
 CC FGF-2 or an angiogenically active fragment or mutain of FGF-2. The
 CC composition (I) and recombinant FGF-2 are useful for treating coronary
 CC artery disease or inducing angiogenesis in a human patient. Recombinant
 CC FGF-2 may be used to treat unstable angina and acute myocardial
 CC infarction.

Query Match 100.0%; Score 787; DB 21; Length 146;
 Best Local Similarity 100.0%; Pred. No. 6e-78;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDKPKRLCYCKNGGFFLRTHPDGRVDGVRKSDPHIKLOQAER 60
 DB 1 PALPEDGSGAFPFGHFKDKPKRLCYCKNGGFFLRTHPDGRVDGVRKSDPHIKLOQAER 60
 QY 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYTSRKYSWYVALKR 120
 DB 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYTSRKYSWYVALKR 120
 QY 121 TGOYKLGPKTGPQKALIFLPMASAKS 146
 DB 121 TGOYKLGPKTGPQKALIFLPMASAKS 146

RESULT 6
 ID AAE11973 standard; Protein: 146 AA.
 AC AAE11973;
 DT 18-DEC-2001 (first entry)
 DE Bovine fibroblast growth factor-2 (FGF-2) #1.
 KW Bovine; therapy; erectile dysfunction; fibroblast growth factor-2; FGF-2;
 KW epidermal growth factor; EGF; platelet derived growth factor; PDGF;
 KW vascular endothelial growth factor; VEGF; tissue growth factor; TGF;
 KW impotence; vasotrophic.
 OS Bos taurus.
 PN WO200168125-A2.
 PD 20-SEP-2001.
 PF 09-MAR-2001; 2001WO-US07702.
 PR 10-MAR-2000; 2000US-188480P.
 PR 11-MAY-2000; 2000US-203415P.
 PA (CHIR) CHIRON CORP.
 PI Whitehouse NJ;
 PI WPI: 2001-616273/71.
 DR N-PSDB: AAD19520.
 FT Treating or preventing erectile dysfunction, comprises administering
 FT growth factor, particularly fibroblast growth factor to blood vessels
 FT in the penis, groin or leg
 PS Claim 6; Page 31; 35pp; English.
 CC The present invention relates to a method for treating or preventing
 CC erectile dysfunction, comprising administering a fibroblast growth
 CC factor (FGF), epidermal growth factor (EGF), platelet derived growth
 CC factor (PDGF), vascular endothelial growth factor (VEGF) or tissue
 CC growth factor (TGF). The invention is used to treat or prevent erectile
 CC dysfunction, or impotence. The present sequence is a bovine FGF-2
 CC protein.
 SQ Sequence 146 AA;
 Query Match 100.0%; Score 787; DB 22; Length 146;
 Best Local Similarity 100.0%; Pred. No. 6e-78;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDKPKRLCYCKNGGFFLRTHPDGRVDGVRKSDPHIKLOQAER 60
 DB 1 PALPEDGSGAFPFGHFKDKPKRLCYCKNGGFFLRTHPDGRVDGVRKSDPHIKLOQAER 60

DB 1 PALPEDGSGAFPFGHFKDKPKRLCYCKNGGFFLRTHPDGRVDGVRKSDPHIKLOQAER 60
 QY 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYTSRKYSWYVALKR 120
 DB 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYTSRKYSWYVALKR 120
 QY 121 TGOYKLGPKTGPQKALIFLPMASAKS 146
 DB 121 TGOYKLGPKTGPQKALIFLPMASAKS 146

RESULT 7
 ID AAE21684 standard; Protein: 146 AA.
 AC AAE21684;
 DT 16-JUL-2002 (first entry)
 DE Bovine fibroblast growth factor-2 (FGF-2) partial protein.
 KW Bovine; pharmaceutical composition; fibroblast growth factor; FGF;
 KW tissue regeneration; therapy; wound; ischemic heart disease; stroke;
 KW bone fracture healing; vulnary; cerebroprotective; vasotrophic.
 OS Bos taurus.
 FH Key
 FT Binding-site 18..22 Location/Qualifiers
 FT Binding-site /note= "Heparin binding site"
 FT Binding-site 36..39 /note= "Heparin binding site"
 FT Binding-site 77..81 /note= "Cell binding site"
 FT Binding-site 107..111 /note= "Cell binding site"
 FT Binding-site /note= "Heparin binding site"
 PN WO200217956-A2.
 PD 07-MAR-2002.
 PF 31-AUG-2001; 2001WO-US27209.
 PR 31-AUG-2000; 2000US-229238P.
 PA (CHIR) CHIRON CORP.
 PI Hageman RV, Shirley BA, Bajwa KK;
 PI WPI: 2002-329732/36.
 DR N-PSDB: AAD34055.
 FT Stabilized pharmaceutical composition comprising fibroblast growth
 FT factor or its variant, and reducing agent to inhibit oxidation of
 FT fibroblast growth factor, useful for promoting wound healing and
 FT treating stroke
 PS Disclosure: Page 47-48; 52pp; English.
 CC The invention relates to pharmaceutical composition comprising stabilised
 CC fibroblast growth factor (FGF) or its variant. Methods for increasing
 CC storage stability of FGF or its variant in a liquid or lyophilised
 CC composition is also provided. The method is useful for increasing storage
 CC stability of a pharmaceutical composition comprising FGF or its variant
 CC which becomes oxidised during storage. The pharmaceutical composition is
 CC useful for promoting tissue regeneration, treating wounds, ischemic
 CC heart diseases, stroke and is used for bone fracture healing. The present
 CC sequence is bovine FGF-2 partial protein.
 SQ Sequence 146 AA;
 Query Match 100.0%; Score 787; DB 23; Length 146;
 Best Local Similarity 100.0%; Pred. No. 6e-78;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAPPPGHPKPKRLKCKNGGFFLRHPDGRVDGVREKSDPHIKLOLAEEER 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 PALPEDGSGAPPPGHPKPKRLKCKNGGFFLRHPDGRVDGVREKSDPHIKLOLAEEER 60
 QY 61 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 120
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 61 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 120
 QY 121 TGOYKLGPKTGPQKALFLPMSAKS 146
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 121 TGOYKLGPKTGPQKALFLPMSAKS 146

RESULT 8

AAU12078
 ID AAU12078 standard; Protein; 146 AA.

AC AAU12078;

DF 09-APR-2002 (first entry)

DE Bovine fibroblast growth factor-2 (FGF-2).

XX Bovine; peripheral artery disease; PAD; fibroblast growth factor-2;

KW FGF-2; peak walking time; ankle branchial index; body pain;

KM stair climbing ability; claudication; critical limb ischaemia; stroke;

KW cardiovascular disorder; diabetes; dyslipidaemia; hypertension.

OS Bos taurus.

PN WO200198346-A2.

PD 27-DEC-2001.

PF 22-JUN-2001; 2001WO-US19978.

PR 22-JUN-2000; 2000US-213504P.

PR 26-JAN-2001; 2001US-264572P.

PR 16-MAR-2001; 2001US-276549P.

PR 21-JUN-2001; 2001US-0886856.

PA (CHIR) CHIRON CORP.

PI Whitehouse MJ;

DR WPI; 2002-147794/19.

DR N-PSDB; AAS20933.

XX Treating peripheral artery disease, for improving peak walking time and

PT ankle branchial index with intermittent claudication in a patient.

PT comprises administering fibroblast growth factor in two doses at one

hour interval

PS Claim 11; Fig 2; 99pp; English.

XX The present invention relates to compositions and methods for treating

CC peripheral artery disease. The method comprises administering fibroblast

CC growth factor-2 (FGF-2) to a patient in two doses, where a single dose

CC is administered into each leg of the patient within a one hour period.

CC FGF-2 is useful for treating peripheral artery disease, improving

CC peak walking time with intermittent claudication, reducing body pain,

CC branchial index with intermittent claudication, reducing severity of the

CC improving stair climbing ability and reducing the severity of the

CC claudication. FGF-2 is also useful for treating or preventing

CC peripheral artery disease (PAD) including claudication and critical

CC limb ischaemia, and even those suffering from a wide spectrum of related

CC clinical ailments including coronary artery disease (CAD), myocardial

CC infarctions, stroke, diabetes, dyslipidaemias, hypertension and patients

CC who have had surgical or catheter-based revascularisations. The present

XX sequence represents bovine FGF-2.

SQ Sequence 146 AA;

Query Match 100.0%; Score 787; DB 23; Length 146;

Best Local Similarity 100.0%; Pred. No. 6e-78;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAPPPGHPKPKRLKCKNGGFFLRHPDGRVDGVREKSDPHIKLOLAEEER 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 1 PALPEDGSGAPPPGHPKPKRLKCKNGGFFLRHPDGRVDGVREKSDPHIKLOLAEEER 60
 QY 61 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 120
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 61 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 120
 QY 121 TGOYKLGPKTGPQKALFLPMSAKS 146
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 121 TGOYKLGPKTGPQKALFLPMSAKS 146

RESULT 9

AAU12078
 ID AAP80613 standard; protein; 147 AA.

AC AAP80613;

DF 17-SEP-1990 (first entry)

DE Sequence of manufactured bovine basic fibroblast growth factor

(bFGF) for expression in E. coli.

KW Bovine basic fibroblast growth factor (bFGF); wound healing; mitogen;

KW phage vector M13mp18.

OS Bovine.

PN Key Location/Qualifiers

FT MISC-difference 113 /note="changed to Thr"

FT MISC-difference 129 /note="changed to Ser"

PN EP275204-A.

XX 20-JUL-1988.

PF 14-JAN-1988; 88EP-0300303.

PR 03-NOV-1987; 87US-0116430.

PA (AMGE-) AMGEN INC.

PI Banks AR, Fox GM;

DR WPI; 1988-199640-29.

DR N-PSDB; AAN81236.

XX DNA encoding human basic fibroblast growth factor

PT used for expression in an E coli host with purification using

PT non-heparin contg. chromatographic column

PS Example; Fig 2; 21pp; English.

XX The published AA sequence of bovine basic FGF was used as a basis for the

CC synthesis of mfd. bFGF gene for expression in E. coli. The nucleotide

CC sequence of this mfd. gene includes codons most often used by E. coli and

CC the inclusion of convenient restriction sites. Oligonucleotides corresp.

CC to both strands of the gene were synthesized in overlapping sections and

CC assembled into 2 larger sections by hybridization and subsequent ligation.

CC The 2 larger sections were then cloned into an approp. phage vector

CC (M13mp18) for nucleotide sequence analysis. The sections were then

CC ligated into an expression vector and introduced into E. coli. Bovine

CC and human basic FGF are known to differ by only two AAs. Site directed

CC mutagenesis was used to convert the bovine gene into one coding for the

CC human FGF (see FT). The FGF is a potent mitogen for a wide variety of cells of mesodermal origin and may be chemotactic for endothelial cells and fibroblasts. The basic FGF induces neovascularisation and may be used in accelerating wound healing.

XX Sequence 147 AA;

Query Match

Best Local Similarity 100.0%; Score 787; DB 9; Length 147;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSSGAFPPGHFKDPKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKLOLAER 60

DB 2 PALPEDGSSGAFPPGHFKDPKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKLOLAER 61

QY 61 GVSISIKVCANRYLAMKEDGRLASKCYTDECFFERLESNNYNTYRSRKYSSWYVALKR 120

DB 62 GVSISIKVCANRYLAMKEDGRLASKCYTDECFFERLESNNYNTYRSRKYSSWYVALKR 121

QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146

DB 122 TGOYKLGPKTGPQKAILFLPMSAKS 147

RESULT 10

AAP90085 standard; protein; 147 AA.

XX AAP90085;

DT 01-NOV-1989 (first entry)

DE Bovine basic fibroblast growth factor.

XX Bovine basic fibroblast growth factor; analogues; heal

KW wounds; tissue generation.

XX Bos taurus.

XX W08904832-A.

PN 01-JUN-1989.

PD 22-NOV-1988; 88WO-US04189.

PF 24-NOV-1987; 87US-0271521.

PR (AMGE) AMGEN INC.

PA Arakawa T, Fox GM;

PI WPI: 1989-178359/24.

XX N-PSDB; AAN90034.

DR Stable basic fibroblast growth factor analogues

PT - used to treat wounds and generate tissue and organs.

XX Disclosure; fig 2; 67pp; English.

PS Bovine basic fibroblast growth factor (bFGF), which is

XX converted by modified base features to analogues and to human bFGF

CC by site-directed mutagenesis of the DNA encoding it (see AAN90034).

CC Sequence 147 AA;

QY Query Match

Best Local Similarity 100.0%; Score 787; DB 10; Length 147;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

DB 1 PALPEDGSSGAFPPGHFKDPKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKLOLAER 60

2 PALPEDGSSGAFPPGHFKDPKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKLOLAER 61

QY 61 GVSISIKVCANRYLAMKEDGRLASKCYTDECFFERLESNNYNTYRSRKYSSWYVALKR 120

DB 62 GVSISIKVCANRYLAMKEDGRLASKCYTDECFFERLESNNYNTYRSRKYSSWYVALKR 121

QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146

DB 122 TGOYKLGPKTGPQKAILFLPMSAKS 147

RESULT 11

AAP70671 standard; protein; 155 AA.

XX AAP70671;

DT 18-APR-1991 (first entry)

DE Sequence of bovine basic fibroblast growth factor (FGF).

XX Wound healing; tissue repair; tumour probe.

XX Bos taurus.

XX Key Location/Qualifiers

FT Peptide 1..9

FT Protein 10..155

PN W08701728-A.

PD 26-MAR-1987.

PF 11-SEP-1986; 86WO-US01879.

PR 30-MAY-1986; 86US-0869382.

PR 12-SEP-1985; 85US-0775521.

PR 16-DEC-1985; 85US-0809163.

XX (BIOT-) BIOTECHN RES PARTNE.

XX Flddes JC, Abraham JA;

XX WPI: 1987-093786/13.

DR N-PSDB; AAN71024.

XX New DNA sequences encoding mammalian fibroblast growth factors -

PT useful in prodn. of pure factors for use in wound healing and

PT tissue repair and of probe for tumour testing

XX Claim 11; Fig 3; 89pp; English.

PS The N-terminal AA sequence of both acidic and basic bovine FGF are

CC used to construct long probes to screen human and bovine genomic

CC libraries for FGF genes. Isolated sequences are used in vector

CC construction etc. and used to transform CV-1 cells for FGF prodn.

XX Sequence 155 AA;

QY Query Match

Best Local Similarity 100.0%; Score 787; DB 8; Length 155;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

DB 1 PALPEDGSSGAFPPGHFKDPKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKLOLAER 60

10 PALPEDGSSGAFPPGHFKDPKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKLOLAER 69

QY 61 GVSISIKVCANRYLAMKEDGRLASKCYTDECFFERLESNNYNTYRSRKYSSWYVALKR 120

DB 70 GVSISIKVCANRYLAMKEDGRLASKCYTDECFFERLESNNYNTYRSRKYSSWYVALKR 129

QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146

DB 130 TGOYKLGPKTGPQKAILFLPMSAKS 155

RESULT 12
 AAM20029
 ID AAM20029 standard; Protein; 155 AA.
 XX
 AC AAM20029;
 XX
 DT 18-SEP-1997 (first entry)
 XX
 DE Recombinant bovine basic fibroblast growth factor.
 XX
 KW FGF; fibroblast growth factor; basic; acidic; wound healing;
 KM neurodegenerative disease; Parkinson's; Alzheimer's disease;
 KM bone fracture; biologically active; embolism.
 XX
 OS Bos taurus.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..9
 FT /label= sig_peptide
 FT 10..155
 FT Protein /label= mat_protein
 XX
 PN US5604293-A.
 XX
 PD 18-FEB-1997.
 XX
 PF 12-SEP-1985; 85US-0775521.
 XX
 PR 15-MAY-1987; 87US-0050706.
 PR 12-SEP-1985; 85US-0775521.
 PR 16-DEC-1985; 85US-0809163.
 PR 30-MAY-1986; 86US-0869382.
 PR 30-MAR-1992; 92US-0860688.
 PR 01-APR-1994; 94US-0221462.
 XX
 PA (SCIO-) SCIOS INC.
 XX
 PI Abraham JA, Flddes JC;
 XX
 DR WPI; 1997-234676/21.
 DR N-PSDB; AAT71236.
 XX
 PT New high purity, recombinant human basic fibroblast growth factor -
 PT for promoting wound healing and treating neurodegenerative
 PT diseases, suitable for production on large scale
 XX
 PS Example 5; Fig 3; 34pp; English.
 XX
 CC AAM20029 is a recombinant bovine basic fibroblast growth factor (bFGF).
 CC Recombinant bFGF is used to promote healing of wounds, bone fractures,
 CC damaged myocardial tissue etc. and since it increases neuronal
 CC survival and promotes neurite outgrowth, may also be used in treatment
 CC of neurological disorders such as Alzheimer's and Parkinson's diseases.
 CC bFGF may also be used for detection of specific inhibitors; for
 CC treatment of cell cultures in vitro before transplant and for inducing
 CC release of tissue plasminogen activator or collagenase, e.g. for
 CC treatment of a chronic tendency to form embolism. Recombinant bFGF can
 CC be produced on a large scale.
 CC
 SQ Sequence 155 AA;
 XX
 Query Match 100.0%; Score 787; DB 18; Length 155;
 Best Local Similarity 100.0%; Pred. No. 6.5e-78;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PALPEDGSGAFPPGHRKDKRLCKNGGFFLRTHPDGRVDGVREKSDPHIKILOAEER 60
 DB 10 PALPEDGSGAFPPGHRKDKRLCKNGGFFLRTHPDGRVDGVREKSDPHIKILOAEER 69
 QY 61 GVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTSRKYSWYVALKR 120
 DB 70 GVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTSRKYSWYVALKR 129

QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
 DB 130 TGOYKLGPKTGPQKAILFLPMSAKS 155
 RESULT 13
 AAE11975
 ID AAE11975 standard; Protein; 155 AA.
 XX
 AC AAE11975;
 XX
 DT 18-DEC-2001 (first entry)
 XX
 DE Bovine fibroblast growth factor-2 (FGF-2) #2.
 XX
 KW Bovine; therapy; erectile dysfunction; fibroblast growth factor-2; FGF-2;
 KM epidermal growth factor; EGF; platelet derived growth factor; PDGF;
 KM vascular endothelial growth factor; VEGF; tissue growth factor; TGF;
 KM impotence; vasotrophic.
 XX
 OS Bos taurus.
 XX
 PN WO200168125-A2.
 XX
 PD 20-SEP-2001.
 XX
 PF 09-MAR-2001; 2001WO-US07702.
 XX
 PR 10-MAR-2000; 2000US-188480P.
 PR 11-MAY-2000; 2000US-203415P.
 XX
 PA (CHIR) CHIRON CORP.
 XX
 PI Whitehouse MJ;
 XX
 DR WPI; 2001-616273/71.
 DR N-PSDB; AAD19522.
 XX
 PT Treating or preventing erectile dysfunction, comprises administering
 PT growth factor, particularly fibroblast growth factor to blood vessels
 PT in the penis, groin or leg
 XX
 PS Claim 6; Page 33; 35pp; English.
 XX
 CC The present invention relates to a method for treating or preventing
 CC erectile dysfunction, comprising administering a fibroblast growth
 CC factor (FGF), epidermal growth factor (EGF), platelet derived growth
 CC factor (PDGF), vascular endothelial growth factor (VEGF) or tissue
 CC growth factor (TGF). The invention is used to treat or prevent erectile
 CC dysfunction, or impotence. The present sequence is a bovine FGF-2
 CC protein.
 XX
 SQ Sequence 155 AA;
 XX
 Query Match 100.0%; Score 787; DB 22; Length 155;
 Best Local Similarity 100.0%; Pred. No. 6.5e-78;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PALPEDGSGAFPPGHRKDKRLCKNGGFFLRTHPDGRVDGVREKSDPHIKILOAEER 60
 DB 10 PALPEDGSGAFPPGHRKDKRLCKNGGFFLRTHPDGRVDGVREKSDPHIKILOAEER 69
 QY 61 GVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTSRKYSWYVALKR 120
 DB 70 GVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTSRKYSWYVALKR 129
 QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
 DB 130 TGOYKLGPKTGPQKAILFLPMSAKS 155
 RESULT 14

AAE21686
ID AAE21686 standard; Protein; 155 AA.
XX
AC AAE21686;
XX
DT 16-JUL-2002 (first entry)
XX
DE Bovine fibroblast growth factor-2 (FGF-2) protein.
XX
KM Bovine; pharmaceutical composition; fibroblast growth factor; FGF;
KW tissue regeneration; therapy; wound; ischemic heart disease; stroke;
KM bone fracture healing; vulnerability; cerebroprotective; vasotropic.
XX
OS Bos taurus.
XX
FH Key Location/Qualifiers
FT Binding-site 27..31 /note- "Heparin binding site"
FT Binding-site 45..48 /note- "Cell binding site"
FT Binding-site 86..90 /note- "Cell binding site"
FT Binding-site 116..120 /note- "Heparin binding site"
FT Binding-site /note- "Heparin binding site"
XX
PN WO200217956-A2.
XX
PD 07-MAR-2002.
XX
PF 31-AUG-2001; 2001WO-US27209.
XX
PR 31-AUG-2000; 2000US-229238P.
XX
PA (CHIR) CHIRON CORP.
XX
PI Hageman RV, Shirley BA, Bajwa KK;
XX
DR WPI: 2002-329732/36.
XX
DR N-PSDB; AAD34057.
XX
XX
PT Stabilized pharmaceutical composition comprising fibroblast growth
PT factor or its variant, and reducing agent to inhibit oxidation of
PT fibroblast growth factor, useful for promoting wound healing and
PT treating stroke
XX
PS Disclosure; Page 48; 52pp; English.
XX
XX The invention relates to pharmaceutical composition comprising stabilised
CC fibroblast growth factor (FGF) or its variant. Methods for increasing
CC storage stability of FGF or its variant in a liquid or lyophilised
CC composition is also provided. The method is useful for increasing storage
CC stability of a pharmaceutical composition comprising FGF or its variant
CC which becomes oxidised during storage. The pharmaceutical composition is
CC useful for promoting tissue regeneration, treating wounds, ischaemic
CC heart diseases, stroke and is used for bone fracture healing. The present
CC sequence is bovine FGF-2 protein.
XX
SQ Sequence 155 AA;
XX
Query Match 100.0%; Score 787; DB 23; Length 155;
Best Local Similarity 100.0%; Pred. No. 6.5e-78;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

DB 130 TGQYKLGPKTGPQKALIFLPMNSAKS 155
RESULT 15
AAU12080
ID AAU12080 standard; Protein; 155 AA.
XX
AC AAU12080;
XX
DT 09-APR-2002 (first entry)
XX
DE Bovine 155 amino acid fibroblast growth factor-2 (FGF-2) protein.
XX
KM Bovine; peripheral artery disease; PAD; fibroblast growth factor-2;
KW FGF-2; peak walking time; ankle brachial index; body pain;
KW stair climbing ability; claudication; critical limb ischaemia; stroke;
KM cardiovascular disorder; diabetes; dyslipidaemia; hypertension.
XX
OS Bos taurus.
XX
PN WO200198346-A2.
XX
PD 27-DEC-2001.
XX
PF 22-JUN-2001; 2001WO-US19978.
XX
PR 22-JUN-2000; 2000US-213504P.
PR 26-JAN-2001; 2001US-264572P.
PR 16-MAR-2001; 2001US-276549P.
PR 21-JUN-2001; 2001US-0886856.
XX
PA (CHIR) CHIRON CORP.
XX
PI Whitehouse MJ;
XX
DR WPI: 2002-147794/19.
XX
DR N-PSDB; AAS20935.
XX
XX
PT Treating peripheral artery disease, for improving peak walking time and
PT ankle brachial index with intermittent claudication in a patient.
PT comprises administering fibroblast growth factor in two doses at one
PT hour interval
XX
XX Claim 11; Fig 4; 99pp; English.
XX
PS The present invention relates to compositions and methods for treating
CC peripheral artery disease. The method comprises administering fibroblast
CC growth factor-2 (FGF-2) to a patient in two doses, where a single dose
CC is administered into each leg of the patient within a one hour period.
CC FGF-2 is useful for treating peripheral artery disease, improving
CC peak walking time with intermittent claudication, improving ankle
CC brachial index with intermittent claudication, reducing body pain,
CC improving stair climbing ability and reducing the severity of the
CC claudication. FGF-2 is also useful for treating or preventing
CC peripheral artery disease (PAD) including claudication and critical
CC limb ischaemia, and even those suffering from a wide spectrum of related
CC clinical ailments including coronary artery disease (CAD), myocardial
CC infarctions, stroke, diabetes, dyslipidaemias, hypertension and patients
CC who have had surgical or catheter-based revascularisations. The present
CC sequence represents bovine 155 amino acid FGF-2 protein.
XX
SQ Sequence 155 AA;
XX
Query Match 100.0%; Score 787; DB 23; Length 155;
Best Local Similarity 100.0%; Pred. No. 6.5e-78;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Wed Dec 4 15:10:35 2002

us-09-886-856-2.rag

Page 9

Db 70 GYVSIGVCANRYLAMKEDGRLLASKCVDECEFFERLESNNYNTYRSRKYSSWYVALKR 129

QY 121 TGQYKLGPKTGPQOKAILFLPMSAKS 146
|||||
Db 130 TGQYKLGPKTGPQOKAILFLPMSAKS 155

Search completed: December 4, 2002, 11:11:12
Job time : 34 secs

GenCore version 5.1.3
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OK protein - protein search, using sw model

Run on: December 4, 2002, 11:10:08 ; Search time 11.5 Seconds
(without alignments)
373.543 Million cell updates/sec

Title: US-09-886-856-2

Perfect score: 787
Sequence: 1 PALPEDGSGAFPFGHFKDP.....GPKTGPGKALFLPMSAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Issued_Patents_AA:*
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2: /cgn2_6/ptodata/1/1aa/5B.COMB.pep:*
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4: /cgn2_6/ptodata/1/1aa/6B.COMB.pep:*
5: /cgn2_6/ptodata/1/1aa/PCUTS.COMB.pep:*
6: /cgn2_6/ptodata/1/1aa/Backfile1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-------------------|
| 1 | 787 | 100.0 | 146 | 4 | US-09-385-114-2 |
| 2 | 787 | 100.0 | 146 | 4 | US-09-417-721-5 |
| 3 | 787 | 100.0 | 155 | 5 | PCT-US81-02186-4 |
| 4 | 787 | 100.0 | 155 | 6 | 5514566-6 |
| 5 | 776 | 98.6 | 146 | 2 | US-08-231-894A-11 |
| 6 | 776 | 98.6 | 146 | 4 | US-09-417-721-3 |
| 7 | 776 | 98.6 | 153 | 3 | US-08-325-186-2 |
| 8 | 776 | 98.6 | 154 | 2 | US-08-438-439C-24 |
| 9 | 776 | 98.6 | 154 | 3 | US-08-325-186-1 |
| 10 | 776 | 98.6 | 154 | 3 | PCT-US81-02186-6 |
| 11 | 776 | 98.6 | 155 | 1 | US-07-959-369-6 |
| 12 | 776 | 98.6 | 155 | 1 | US-08-023-757-2 |
| 13 | 776 | 98.6 | 155 | 1 | US-07-842-177A-1 |
| 14 | 776 | 98.6 | 155 | 1 | US-08-177-502-2 |
| 15 | 776 | 98.6 | 155 | 1 | US-08-439-725A-10 |
| 16 | 776 | 98.6 | 155 | 1 | US-08-325-632-1 |
| 17 | 776 | 98.6 | 155 | 1 | US-08-462-169B-10 |
| 18 | 776 | 98.6 | 155 | 2 | US-08-867-471-10 |
| 19 | 776 | 98.6 | 155 | 2 | US-08-438-439C-14 |
| 20 | 776 | 98.6 | 155 | 2 | US-08-951-822-28 |
| 21 | 776 | 98.6 | 155 | 3 | US-09-103-079-10 |
| 22 | 776 | 98.6 | 155 | 3 | US-08-703-245-6 |
| 23 | 776 | 98.6 | 155 | 3 | US-08-897-924A-25 |
| 24 | 776 | 98.6 | 155 | 3 | US-08-718-904-11 |
| 25 | 776 | 98.6 | 155 | 3 | US-09-023-082A-17 |
| 26 | 776 | 98.6 | 155 | 3 | US-09-030-613-3 |
| 27 | 776 | 98.6 | 155 | 4 | US-09-098-628-2 |

| | | | | | | |
|----|-----|------|-----|---|-------------------|--------------------|
| 28 | 776 | 98.6 | 155 | 4 | US-09-451-905-3 | Sequence 3, Appl1 |
| 29 | 776 | 98.6 | 155 | 4 | US-09-240-952-4 | Sequence 28, Appl1 |
| 30 | 776 | 98.6 | 155 | 4 | US-09-368-951-28 | Sequence 9, Appl1 |
| 31 | 776 | 98.6 | 155 | 4 | US-09-366-009-3 | Sequence 3, Appl1 |
| 32 | 776 | 98.6 | 155 | 5 | US-09-619-213B-99 | Sequence 2, Appl1 |
| 33 | 776 | 98.6 | 155 | 5 | PCT-US91-02186-2 | Sequence 2, Appl1 |
| 34 | 776 | 98.6 | 155 | 6 | 5514566-8 | Patent No. 5514566 |
| 35 | 776 | 98.6 | 158 | 2 | US-08-599-895-3 | Sequence 3, Appl1 |
| 36 | 776 | 98.6 | 158 | 3 | US-09-211-290-3 | Sequence 3, Appl1 |
| 37 | 776 | 98.6 | 158 | 3 | US-09-322-676-3 | Sequence 3, Appl1 |
| 38 | 776 | 98.6 | 158 | 4 | US-09-220-077C-2 | Sequence 2, Appl1 |
| 39 | 776 | 98.6 | 158 | 4 | US-09-466-036A-3 | Sequence 3, Appl1 |
| 40 | 776 | 98.6 | 210 | 1 | US-08-464-590A-14 | Sequence 14, Appl1 |
| 41 | 776 | 98.6 | 210 | 2 | US-08-207-412B-9 | Sequence 9, Appl1 |
| 42 | 776 | 98.6 | 210 | 3 | US-09-093-585-14 | Sequence 14, Appl1 |
| 43 | 776 | 98.6 | 235 | 1 | US-08-078-683A-39 | Sequence 39, Appl1 |
| 44 | 776 | 98.6 | 432 | 1 | US-07-959-369-8 | Sequence 8, Appl1 |
| 45 | 776 | 98.6 | 432 | 2 | US-08-836-854-20 | Sequence 20, Appl1 |

ALIGNMENTS

RESULT 1
US-09-385-114-2
; Sequence 2, Application US/09385114
; Patent No. 6440934
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha J.
; TITLE OF INVENTION: Angiogenically Effective Unit Dose of FGF-2 and Method
; FILE REFERENCE: 1296/121690S04
; CURRENT FILING DATE: 1999-08-27
; PRIOR APPLICATION NUMBER: 60/104,103
; PRIOR FILING DATE: 1998-10-13
; PRIOR APPLICATION NUMBER: 60/104,102
; PRIOR FILING DATE: 1998-10-13
; NUMBER OF SEQ ID NOS: 3
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 2
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Bovis bovinus
US-09-385-114-2

Query Match
Best Local Similarity 100.0%; Pred. No. 1.5e-83; Length 146;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDPRRLYCKNGGFFLIIHPDGRVGVREKSDPHIKLOLAEEER 60
DB 1 PALPEDGSGAFPFGHFKDPRRLYCKNGGFFLIIHPDGRVGVREKSDPHIKLOLAEEER 60

QY 61 GVSISGVCAKRLAKMEGRLLASCKYVDECFEFLRSENNNTYRSRYSYVALKR 120
DB 61 GVSISGVCAKRLAKMEGRLLASCKYVDECFEFLRSENNNTYRSRYSYVALKR 120

QY 121 TGQYKLGPKTGPGOKALFLPMSAKS 146
DB 121 TGQYKLGPKTGPGOKALFLPMSAKS 146

RESULT 2
US-09-417-721-5
; Sequence 5, Application US/09417721
; Patent No. 6451303
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha J.
; APPLICANT: Kavanaugh, Michael W.
; TITLE OF INVENTION: Angiogenically Effective Unit Dose of FGF and Method of
; FILE REFERENCE: 1296/121690S05

CURRENT APPLICATION NUMBER: US/09/417,721
CURRENT FILING DATE: 1999-10-13
PRIOR APPLICATION NUMBER: 60/104,103
PRIOR FILING DATE: 1998-10-13
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5
LENGTH: 146
TYPE: PRT
ORGANISM: bovine FGF-2
US-09-417-721-5

Query Match 100.0%; Score 787; DB 4; Length 146;
Best Local Similarity 100.0%; Pred. No. 1.5e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPPGHFKDKPRKLYCKNGGFFLRTHPDGRVDGVREKSDPHIKLOLAEEER 60
DB 1 PALPEDGSGAFPPGHFKDKPRKLYCKNGGFFLRTHPDGRVDGVREKSDPHIKLOLAEEER 60

QY 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTYRSRKYSSWYVALKR 120
DB 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTYRSRKYSSWYVALKR 120

QY 121 TGOYKLGPKTGPQKALIFLPMASAKS 146
DB 121 TGOYKLGPKTGPQKALIFLPMASAKS 146

RESULT 3
PCT-US91-02186-4
Sequence 4, Application PC/TUS9102186
GENERAL INFORMATION:
APPLICANT: California Biotechnology Inc.
APPLICANT: Inventors: Thompson, Stewart A.
APPLICANT: Abraham, Judith A.
TITLE OF INVENTION: High Level Expression of Basic
TITLE OF INVENTION: Fibroblast Growth Factor Having a Homogeneous
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Irell & Manella
STREET: 545 Middlefield Road, Suite 200
CITY: Menlo Park
STATE: California
COUNTRY: USA
ZIP: 94025-3471
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02186
FILING DATE: 19910702
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Muraishige, Kate H.
REGISTRATION NUMBER: 29,959
REFERENCE/DOCKET NUMBER: 1900-0275.41
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-327-7250
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US91-02186-4

Query Match 100.0%; Score 787; DB 5; Length 155;
Best Local Similarity 100.0%; Pred. No. 1.6e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPPGHFKDKPRKLYCKNGGFFLRTHPDGRVDGVREKSDPHIKLOLAEEER 60
DB 10 PALPEDGSGAFPPGHFKDKPRKLYCKNGGFFLRTHPDGRVDGVREKSDPHIKLOLAEEER 69

QY 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTYRSRKYSSWYVALKR 120
DB 70 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTYRSRKYSSWYVALKR 129

QY 121 TGOYKLGPKTGPQKALIFLPMASAKS 146
DB 130 TGOYKLGPKTGPQKALIFLPMASAKS 155

RESULT 4
5514566-6
Patent No. 5514566
TITLE OF INVENTION: METHODS OF PRODUCING RECOMBINANT
FIBROBLAST GROWTH FACTORS
NUMBER OF SEQUENCES: 21
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/417,022
FILING DATE: 05-APR-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 809,163
FILING DATE: 16-DEC-1985
APPLICATION NUMBER: 775,521
FILING DATE: 12-SEP-1985
SEQ ID NO: 6
LENGTH: 155
5514566-6

Query Match 100.0%; Score 787; DB 6; Length 155;
Best Local Similarity 100.0%; Pred. No. 1.6e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPPGHFKDKPRKLYCKNGGFFLRTHPDGRVDGVREKSDPHIKLOLAEEER 60
DB 10 PALPEDGSGAFPPGHFKDKPRKLYCKNGGFFLRTHPDGRVDGVREKSDPHIKLOLAEEER 69

QY 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTYRSRKYSSWYVALKR 120
DB 70 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYTYRSRKYSSWYVALKR 129

QY 121 TGOYKLGPKTGPQKALIFLPMASAKS 146
DB 130 TGOYKLGPKTGPQKALIFLPMASAKS 155

RESULT 5
US-08-231-894A-11
Sequence 11, Application US/08231894A
Patent No. 5851990
GENERAL INFORMATION:
APPLICANT: FUJISHIMA, AKIRA
APPLICANT: FUKUDA, TSUNEHICO
TITLE OF INVENTION: BRGF MOLEIN AND ITS PRODUCTION
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS
ADDRESSEE: 6 CUSHMAN
STREET: 130 WATER STREET
CITY: BOSTON
STATE: MASSACHUSETTS
COUNTRY: US
ZIP: 02109
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSeq Version 1.5
CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/231,894A
FILING DATE: 22-APR-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/873907
FILING DATE: 24-APR-1992
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 097655-1991
FILING DATE: 26-APR-1991
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 066381-1992
FILING DATE: 24-MAR-1992
ATTORNEY/AGENT INFORMATION:
NAME: RESNICK, DAVID S.
REGISTRATION NUMBER: 34235
REFERENCE/DOCKET NUMBER: 41769-FWC
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 523-3400
TELEFAX: (617) 523-6440
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 146 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
ANTI-SENSE: NO
FRAGMENT TYPE: Internal
ORIGINAL SOURCE:
US-08-231-894A-11

Query Match 98.6%; Score 776; DB 2; Length 146;
Best Local Similarity 98.6%; Pred. No. 2.7e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDPKRLCKNGGFLLRIHPDGRVDGVREKSDPHIKLOLAER 60
DB 1 PALPEDGSGAFPFGHFKDPKRLCKNGGFLLRIHPDGRVDGVREKSDPHIKLOLAER 60

QY 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYSSWYALKR 120
DB 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYSSWYALKR 120

QY 121 TGOYKLGSKTGPQOKAILFLPMSAKS 146
DB 121 TGOYKLGSKTGPQOKAILFLPMSAKS 146

RESULT 6
US-09-417-721-3
Sequence 3, Application US/09417721
Patent No. 6451303
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha J.
APPLICANT: Kavanaugh, Michael W.
TITLE OF INVENTION: Angiogenetically Effective Unit Dose of FGF and Method of
FILE REFERENCE: 1296/121690505
CURRENT APPLICATION NUMBER: US/09/417,721
CURRENT FILING DATE: 1999-10-13
PRIOR APPLICATION NUMBER: 60/104,103
PRIOR FILING DATE: 1998-10-13
NUMBER OF SEQ ID NOS: 15
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO: 3
LENGTH: 146
TYPE: PRT
ORGANISM: Human FGF-2
US-09-417-721-3

Query Match 98.6%; Score 776; DB 4; Length 146;

Best Local Similarity 98.6%; Pred. No. 2.7e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDPKRLCKNGGFLLRIHPDGRVDGVREKSDPHIKLOLAER 60
DB 1 PALPEDGSGAFPFGHFKDPKRLCKNGGFLLRIHPDGRVDGVREKSDPHIKLOLAER 60

QY 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYSSWYALKR 120
DB 61 GVSISGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYSSWYALKR 120

QY 121 TGOYKLGSKTGPQOKAILFLPMSAKS 146
DB 121 TGOYKLGSKTGPQOKAILFLPMSAKS 146

RESULT 7
US-08-325-186-2
Sequence 2, Application US/08325186
Patent No. 6046164
GENERAL INFORMATION:
APPLICANT: ASANO, Taiji
APPLICANT: SUGIMOTO, Hajime
APPLICANT: TERASHIMA, Akio
APPLICANT: NAKANO, Yoshiko
APPLICANT: AMAKAWA, Masahiro
APPLICANT: SAGA, Katumasa
TITLE OF INVENTION: THERAPEUTIC AGENT FOR DISEASES OF PERIODONTAL
TITLE OF INVENTION: TISSUE
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: Armstrong, Westernman, Hattori, Mclelland &
ADDRESS: Naughton
STREET: 1725 K St. N.W. Suite 1000
CITY: Washington
STATE: D.C.
COUNTRY: U.S.A.
ZIP: 20006
COMPUTER READABLE FORM:
MEDIUM TYPE: diskette, 3.5 in, 1.44MB
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/325,186
FILING DATE: 24-MAY-95
CLASSIFICATION: 514
PRIOR APPLICATION DATA: PCT/JP93/01211
APPLICATION NUMBER: PCT/JP93/01211
FILING DATE: 25-AUG-1993
ATTORNEY/AGENT INFORMATION:
NAME: Stevens-Smith, Theresa M.
REGISTRATION NUMBER: 36,281
REFERENCE/DOCKET NUMBER: 950319
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 659-2930
TELEFAX: (202) 887-0357
TELEX: 440142
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 153
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-325-186-2

Query Match 98.6%; Score 776; DB 3; Length 153;
Best Local Similarity 98.6%; Pred. No. 2.9e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDPKRLCKNGGFLLRIHPDGRVDGVREKSDPHIKLOLAER 60
DB 8 PALPEDGSGAFPFGHFKDPKRLCKNGGFLLRIHPDGRVDGVREKSDPHIKLOLAER 67

RESULT 10
PCT-US91-02186-6
Sequence 6, Application PC/TUS9102186
GENERAL INFORMATION:
APPLICANT: California Biotechnology Inc.
INVENTORS: Thompson, Stewart A.
APPLICANT: Abraham, Judith A.
TITLE OF INVENTION: High Level Expression of Basic
Fibroblast Growth Factor Having a Homogeneous

TITLE OF INVENTION: N-terminus
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Irell & Manella
STREET: 545 Middlefield Road, Suite 200
CITY: Menlo Park
STATE: California
COUNTRY: USA
ZIP: 94025-3471
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02186
FILING DATE: 19910702
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Murashige, Kate H.
REGISTRATION NUMBER: 29,959
REFERENCE/DOCKET NUMBER: 1900-0275.41
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-327-7250
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US91-02186-6

Query Match 98.6%; Score 776; DB 5; Length 154;
Best Local Similarity 98.6%; Pred. No. 2.9e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKILOAEER 60
DB 9 PALPEDGSGAFPFGHFKDKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKILOAEER 68
QY 61 GVSISIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 120
DB 69 GVSISIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 128
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
DB 129 TGOYKLGSKTGPQKAILFLPMSAKS 154

RESULT 11
US-07-959-369-6
Sequence 6: Application US/07959369
Patent No. 5302701
GENERAL INFORMATION:
APPLICANT: Hidetaka HASHII et al.
TITLE OF INVENTION: No. 5302701el Functional Polypeptide
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Wenderoth, Lind & Ponack
STREET: 805 Fifteenth Street, N.W., #700
CITY: Washington
STATE: D.C.
COUNTRY: U.S.A.
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 5.25 inch, 500 kb
COMPUTER: IBM Compatible
OPERATING SYSTEM: MS-DOS
SOFTWARE: Wordperfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/959,369
FILING DATE: 19921013
CLASSIFICATION: 530

PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Warren M. Cheek, Jr.
REGISTRATION NUMBER: 33,367
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-8850
TELEFAX:
TELEX:
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: polypeptide
HYPOTHETICAL:
ANTI-SENSE:
FRAGMENT TYPE:
ORIGINAL SOURCE:
ORGANISM:
STRAIN:
INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE:
HAPLOTYPE:
TISSUE TYPE:
CELL TYPE:
CELL LINE:
ORGANELLE:
IMMEDIATE SOURCE:
LIBRARY:
CLONE:
POSITION IN GENOME:
CHROMOSOME/SEGMENT:
MAP POSITION:
UNITS:
FEATURE:
NAME/KEY:
LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION:
PUBLICATION INFORMATION:
AUTHORS:
TITLE:
JOURNAL:
VOLUME:
ISSUE:
PAGES:
DATE:
DOCUMENT NUMBER:
FILING DATE:
PUBLICATION DATE:
RELEVANT RESIDUES IN SEQ ID NO:
US-07-959-369-6

Query Match 98.6%; Score 776; DB 1; Length 155;
Best Local Similarity 98.6%; Pred. No. 3e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKILOAEER 60
DB 10 PALPEDGSGAFPFGHFKDKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKILOAEER 69
QY 61 GVSISIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 120
DB 70 GVSISIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRKYSSWYVALKR 129
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 12
US-08-023-757-2
Sequence 2, Application US/08023757
Patent No. 5302702
GENERAL INFORMATION:
APPLICANT: Seddon Dr., Andrew P.
APPLICANT: Bohlen Dr., Peter
APPLICANT: Gluzman Dr., Yakov
TITLE OF INVENTION: Chimeric Fibroblast Growth Factors
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: American Cyanamid Company
STREET: 1937 West Main Street, P. O. Box 60
CITY: Stamford,
STATE: CT
COUNTRY: USA
ZIP: 06904-0060
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/023,757
FILING DATE: 26-FEB-1993
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/615,202
FILING DATE: 23-NOV-1990
ATTORNEY/AGENT INFORMATION:
NAME: Tsevdos Dr., Estelle J.
REGISTRATION NUMBER: 31,145
REFERENCE/DOCKET NUMBER: 31,219-00
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203-321-2756
TELEFAX: 203-321-2971
TELEX: 710-474-4059
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-023-757-2

Query Match 98.6%; Score 776; DB 1; Length 155;
Best Local Similarity 98.6%; Pred. No. 3e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSSGAFPPGHFDPKRLKCKNGGFLRLHPDGRVGVREKSPHIKLOLAER 60
DB 10 PALPEDGSSGAFPPGHFDPKRLKCKNGGFLRLHPDGRVGVREKSPHIKLOLAER 69
QY 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKYSWYVALKR 120
DB 70 GVSISIKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKYSWYVALKR 129
QY 121 TGQYKLGKRTGPGKAILFLPMSAKS 146
DB 130 TGQYKLGKRTGPGKAILFLPMSAKS 155

RESULT 13
US-07-842-177A-1
Sequence 1, Application US/07842177A
Patent No. 5348863
GENERAL INFORMATION:
APPLICANT: MONSANT, PIERRE
APPLICANT: PAUL, FRANCOIS
APPLICANT: BETBEDER, DIDIER
APPLICANT: SARMIENTOS, PAOLO
TITLE OF INVENTION: PROCESS FOR THE ENZYMATIC PREPARATION OF

TITLE OF INVENTION: BASIC FIBROBLAST GROWTH FACTOR
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: OBLON, SPIVAK, MCLELLAND, MAIER & NEUSTADT,
ADDRESS: P.C.
STREET: 1755 Jefferson Davis Highway, Suite 400
CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/842,177A
FILING DATE: 19920402
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9017008.5
FILING DATE: 02-AUG-1990
ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5348863man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 769-263-0 PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 521-4500
TELEFAX: (703) 486-2347
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
US-07-842-177A-1

Query Match 98.6%; Score 776; DB 1; Length 155;
Best Local Similarity 98.6%; Pred. No. 3e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSSGAFPPGHFDPKRLKCKNGGFLRLHPDGRVGVREKSPHIKLOLAER 60
DB 10 PALPEDGSSGAFPPGHFDPKRLKCKNGGFLRLHPDGRVGVREKSPHIKLOLAER 69
QY 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKYSWYVALKR 120
DB 70 GVSISIKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKYSWYVALKR 129
QY 121 TGQYKLGKRTGPGKAILFLPMSAKS 146
DB 130 TGQYKLGKRTGPGKAILFLPMSAKS 155

RESULT 14
US-08-177-502-2
Sequence 2, Application US/08177502
Patent No. 5371206
GENERAL INFORMATION:
APPLICANT: Seddon Dr., Andrew P.
APPLICANT: Bohlen Dr., Peter
APPLICANT: Gluzman Dr., Yakov
TITLE OF INVENTION: Chimeric Fibroblast Growth Factors
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: American Cyanamid Company
STREET: 1937 West Main Street, P. O. Box 60
CITY: Stamford,
STATE: CT
COUNTRY: USA
ZIP: 06904-0060

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COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/177,502
FILING DATE: 05-JAN-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/023,757
FILING DATE: 26-FEB-1993
APPLICATION NUMBER: US/07/615,202
FILING DATE: 23-NOV-1990
ATTORNEY/AGENT INFORMATION:
NAME: Tsavdos Dr., Estelle J.
REGISTRATION NUMBER: 31,145
REFERENCE/DOCKET NUMBER: 31,219-00
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203-321-2756
TELEFAX: 203-321-2971
TELEX: 710-474-4059
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-177-502-2

Query Match          98.6%; Score 776; DB 1; Length 155;
Best Local Similarity 98.6%; Pred. No. 3e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHKDKPKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKIQLQAEER 60
   |||||||
DB 10 PALPEDGSGAFPFGHKDKPKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKIQLQAEER 69
QY 61 GVSISIKGVCANRYLAMKEDGRLLASKCVTDCEFFERLESNNYTYRSRKYSSWYVALKR 120
   |||||||
DB 70 GVSISIKGVCANRYLAMKEDGRLLASKCVTDCEFFERLESNNYTYRSRKYSSWYVALKR 129
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
   |||||||
DB 130 TGOYKLGPKTGPQKAILFLPMSAKS 155

RESULT 15
US-08-439-725A-10
; Sequence 10, Application US/08439725A
; Patent No. 5693775
; GENERAL INFORMATION:
; APPLICANT: Nathans, Jeremy
; APPLICANT: Smallwood, Philip M.
; TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
; TITLE OF INVENTION: FACTOR-1 (FHF-1) AND METHODS OF USE
; NUMBER OF SEQUENCES: 15
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 4225 Executive Square, Suite 1400
; CITY: La Jolla
; STATE: CA
; COUNTRY: USA
; ZIP: 92037
; COMPUTER READABLE FORM:
; MEDIUM TYPE: floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/439,725A
; FILING DATE: 12-MAY-1995
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CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Hallie, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/047001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 617/678-5099
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-439-725A-10

Query Match          98.6%; Score 776; DB 1; Length 155;
Best Local Similarity 98.6%; Pred. No. 3e-82;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHKDKPKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKIQLQAEER 60
   |||||||
DB 10 PALPEDGSGAFPFGHKDKPKRLKCKNGGFLLRHPDGRVDGVREKSDPHIKIQLQAEER 69
QY 61 GVSISIKGVCANRYLAMKEDGRLLASKCVTDCEFFERLESNNYTYRSRKYSSWYVALKR 120
   |||||||
DB 70 GVSISIKGVCANRYLAMKEDGRLLASKCVTDCEFFERLESNNYTYRSRKYSSWYVALKR 129
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
   |||||||
DB 130 TGOYKLGPKTGPQKAILFLPMSAKS 155

Search completed: December 4, 2002, 11:13:39
Job time : 12.5 secs
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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:09:48 : Search time 7.5 Seconds

(without alignments)
316.184 Million cell updates/sec

Title: US-09-886-856-2

Perfect score: 787

Sequence: 1 PALPEDGSGAFPPGHRKDP.....GPKTGPQKATLFLPMSAKS 146

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Gapop 10.0 , Gapext 0.5

Searched: 103943 seqs, 16242309 residues

Total number of hits satisfying chosen parameters: 103943

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 08

Maximum Match 1008
Listing first 45 summaries

Database : Published Applications.AA.*

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2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
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11: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep.*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|------------------|
| 1 | 787 | 100.0 | 146 | 9 | US-10-131-965-5 |
| 2 | 787 | 100.0 | 146 | 10 | US-09-802-365-2 |
| 3 | 787 | 100.0 | 146 | 10 | US-09-771-302-2 |
| 4 | 787 | 100.0 | 146 | 10 | US-09-886-856-2 |
| 5 | 787 | 100.0 | 155 | 10 | US-09-802-365-6 |
| 6 | 787 | 100.0 | 155 | 10 | US-09-886-856-6 |
| 7 | 776 | 98.6 | 146 | 9 | US-10-131-965-3 |
| 8 | 776 | 98.6 | 146 | 10 | US-09-802-365-4 |
| 9 | 776 | 98.6 | 146 | 10 | US-09-886-856-4 |
| 10 | 776 | 98.6 | 155 | 10 | US-09-822-485-5 |
| 11 | 776 | 98.6 | 155 | 10 | US-09-802-365-8 |
| 12 | 776 | 98.6 | 155 | 10 | US-09-251-263-10 |
| 13 | 776 | 98.6 | 155 | 10 | US-09-425-021-10 |
| 14 | 776 | 98.6 | 155 | 10 | US-09-886-856-8 |
| 15 | 776 | 98.6 | 155 | 10 | US-09-749-728B-7 |
| 16 | 776 | 98.6 | 158 | 10 | US-09-826-210-2 |
| 17 | 776 | 98.6 | 159 | 10 | US-09-934-706-2 |
| 18 | 776 | 98.6 | 210 | 10 | US-09-902-773A-4 |
| 19 | 776 | 98.6 | 501 | 10 | US-09-934-706-4 |

| | | | | | | |
|----|-------|------|-----|----|------------------|--------------------|
| 20 | 754 | 95.8 | 150 | 12 | US-10-016-447-8 | Sequence 8, Appl1 |
| 21 | 711 | 90.3 | 134 | 9 | US-09-901-938-24 | Sequence 24, Appl1 |
| 22 | 395.5 | 50.3 | 153 | 10 | US-09-822-485-4 | Sequence 4, Appl1 |
| 23 | 395 | 50.2 | 141 | 9 | US-09-929-945-7 | Sequence 7, Appl1 |
| 24 | 395 | 50.2 | 141 | 10 | US-09-929-945-7 | Sequence 7, Appl1 |
| 25 | 395 | 50.2 | 154 | 9 | US-09-929-945-8 | Sequence 8, Appl1 |
| 26 | 395 | 50.2 | 155 | 9 | US-09-929-945-8 | Sequence 8, Appl1 |
| 27 | 395 | 50.2 | 155 | 10 | US-09-284-663A-9 | Sequence 9, Appl1 |
| 28 | 395 | 50.2 | 155 | 10 | US-09-902-773A-3 | Sequence 3, Appl1 |
| 29 | 395 | 50.2 | 155 | 10 | US-09-251-263-9 | Sequence 9, Appl1 |
| 30 | 395 | 50.2 | 155 | 10 | US-09-425-021-9 | Sequence 9, Appl1 |
| 31 | 395 | 50.2 | 155 | 10 | US-09-929-918-2 | Sequence 2, Appl1 |
| 32 | 395 | 50.2 | 155 | 10 | US-09-929-918-2 | Sequence 2, Appl1 |
| 33 | 388 | 49.3 | 137 | 9 | US-09-901-938-23 | Sequence 23, Appl1 |
| 34 | 379 | 48.2 | 140 | 9 | US-10-131-965-1 | Sequence 1, Appl1 |
| 35 | 379 | 48.2 | 149 | 12 | US-10-016-447-9 | Sequence 9, Appl1 |
| 36 | 375 | 47.6 | 135 | 9 | US-09-929-945-5 | Sequence 5, Appl1 |
| 37 | 375 | 47.6 | 135 | 10 | US-09-929-918-5 | Sequence 5, Appl1 |
| 38 | 366 | 46.5 | 140 | 9 | US-10-131-965-2 | Sequence 2, Appl1 |
| 39 | 341 | 43.3 | 158 | 12 | US-10-016-447-18 | Sequence 18, Appl1 |
| 40 | 314.5 | 40.0 | 155 | 10 | US-09-425-021-24 | Sequence 24, Appl1 |
| 41 | 247.5 | 31.4 | 206 | 10 | US-09-251-263-13 | Sequence 13, Appl1 |
| 42 | 245.5 | 31.2 | 205 | 9 | US-10-131-965-8 | Sequence 8, Appl1 |
| 43 | 245.5 | 31.2 | 206 | 10 | US-09-822-485-7 | Sequence 7, Appl1 |
| 44 | 245.5 | 31.2 | 206 | 10 | US-09-750-963-9 | Sequence 9, Appl1 |
| 45 | 245.5 | 31.2 | 206 | 10 | US-09-902-773A-5 | Sequence 5, Appl1 |

ALIGNMENTS

RESULT 1
US-10-131-965-5
; Sequence 5, Application US/10131965
; Patent No. US20020165160A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Michael J.
; TITLE OF INVENTION: Angiogenetically Effective Unit Dose of FGF and Method of
; FILE REFERENCE: 1296/121690S05
; CURRENT APPLICATION NUMBER: US/10/131,965
; CURRENT FILING DATE: 2002-04-25
; PRIOR APPLICATION NUMBER: US/09/417,721
; PRIOR FILING DATE: 1999-10-13
; PRIOR APPLICATION NUMBER: 60/104,103
; PRIOR FILING DATE: 1998-10-13
; NUMBER OF SEQ ID NOS: 15
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 5
; LENGTH: 146
; TYPE: PRT
; ORGANISM: bovine FGF-2
US-10-131-965-5

Query Match 100.0%; Score 787; DB 9; Length 146;
Best Local Similarity 100.0%; Pred. No. 4.5e-75;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 PALPEDGSGAFPPGHRKDPKRLCYCKNGAFPLRLHPDGRVGVREKSDPHIKLOLAER 60
DB 1 PALPEDGSGAFPPGHRKDPKRLCYCKNGAFPLRLHPDGRVGVREKSDPHIKLOLAER 60
QY 61 GVSIVKGCANRYLAMEDEGRILASKCVTDECFEERLESNNYTSRKYSSWYALKR 120
DB 61 GVSIVKGCANRYLAMEDEGRILASKCVTDECFEERLESNNYTSRKYSSWYALKR 120
QY 121 TGOYKLGPKTGPQKATLFLPMSAKS 146
DB 121 TGOYKLGPKTGPQKATLFLPMSAKS 146
RESULT 2

US-09-802-365-2
; Sequence 2, Application US/09802365
; Patent No. US20020032153A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment and Prevention of Erectile Dysfunction
; FILE REFERENCE: 1671.003
; CURRENT APPLICATION NUMBER: US/09/802,365
; PRIOR FILING DATE: 2001-03-09
; PRIOR APPLICATION NUMBER: 60/188,480
; PRIOR FILING DATE: 2000-03-10
; PRIOR APPLICATION NUMBER: 60/203,415
; PRIOR FILING DATE: 2000-05-11
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-802-365-2

Query Match
Best Local Similarity 100.0%; Score 787; DB 10; Length 146;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYNTYRSRKYSSWYVALKR 120
Db 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYNTYRSRKYSSWYVALKR 120
Qy 121 TGQYKLGPKTGPQKAILFLPMSAKS 146
Db 121 TGQYKLGPKTGPQKAILFLPMSAKS 146

RESULT 3
US-09-771-302-2
; Sequence 2, Application US/09771302
; Patent No. US20020072489A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha J
; TITLE OF INVENTION: Angiogenically Effective Unit Dose of FGF-2 and Method
; FILE REFERENCE: 1296/12169US04
; CURRENT APPLICATION NUMBER: US/09/771,302
; PRIOR FILING DATE: 2001-01-26
; PRIOR APPLICATION NUMBER: 09/385,114
; PRIOR FILING DATE: 1999-08-27
; PRIOR APPLICATION NUMBER: 60/104,102
; PRIOR FILING DATE: 1998-10-13
; NUMBER OF SEQ ID NOS: 3
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Bovis bovinus
US-09-771-302-2

Query Match
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Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 1 PALPDDGSSGAFPPGHFDPKRLKCKNGGFLRIHPDGRVGVREKSPHITKLOLAER 60
Qy 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYNTYRSRKYSSWYVALKR 120
Db 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYNTYRSRKYSSWYVALKR 120

Qy 121 TGQYKLGPKTGPQKAILFLPMSAKS 146
Db 121 TGQYKLGPKTGPQKAILFLPMSAKS 146

RESULT 4
US-09-886-856-2
; Sequence 2, Application US/09886856
; Patent No. US20020115603A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment of Peripheral Artery Disease
; FILE REFERENCE: P16090.004
; CURRENT APPLICATION NUMBER: US/09/886,856
; PRIOR FILING DATE: 2001-06-21
; PRIOR APPLICATION NUMBER: 60/213,504
; PRIOR FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/264,572
; PRIOR FILING DATE: 2000-01-26
; PRIOR APPLICATION NUMBER: 60/276,549
; PRIOR FILING DATE: 2001-03-16
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-886-856-2

Query Match
Best Local Similarity 100.0%; Score 787; DB 10; Length 146;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PALPDDGSSGAFPPGHFDPKRLKCKNGGFLRIHPDGRVGVREKSPHITKLOLAER 60
Db 1 PALPDDGSSGAFPPGHFDPKRLKCKNGGFLRIHPDGRVGVREKSPHITKLOLAER 60
Qy 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYNTYRSRKYSSWYVALKR 120
Db 61 GVSISIKVCANRYLAMKEDGRLASKCVTDCFFERLESNNYNTYRSRKYSSWYVALKR 120
Qy 121 TGQYKLGPKTGPQKAILFLPMSAKS 146
Db 121 TGQYKLGPKTGPQKAILFLPMSAKS 146

RESULT 5
US-09-802-365-6
; Sequence 6, Application US/09802365
; Patent No. US20020032153A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment and Prevention of Erectile Dysfunction
; FILE REFERENCE: 1671.003
; CURRENT APPLICATION NUMBER: US/09/802,365
; PRIOR FILING DATE: 2001-03-09
; PRIOR APPLICATION NUMBER: 60/188,480
; PRIOR FILING DATE: 2000-03-10
; PRIOR APPLICATION NUMBER: 60/203,415
; PRIOR FILING DATE: 2000-05-11
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 6
; LENGTH: 155
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-802-365-6

Query Match
Best Local Similarity 100.0%; Score 787; DB 10; Length 155;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Db 10 PALPEDGGGGAFFPGHFKDPKRLKCKNGGFLLRIHPDGRVNDGVRKSDPHIKLOLAER 69
QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 120
Db 70 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 129
QY 121 TGQYKLGKPTGPGOKAILFLPMSAKS 146
Db 130 TGQYKLGKPTGPGOKAILFLPMSAKS 155

RESULT 6
US-09-886-856-6
; Sequence 6, Application US/09886856
; Patent No. US20020115603A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment of Peripheral Artery Disease
; FILE REFERENCE: PP16030.004
; CURRENT APPLICATION NUMBER: US/09/886, 856
; PRIOR FILING DATE: 2001-06-21
; PRIOR APPLICATION NUMBER: 60/213,504
; PRIOR FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/264,572
; PRIOR FILING DATE: 2000-01-26
; PRIOR APPLICATION NUMBER: 60/276,549
; PRIOR FILING DATE: 2001-03-16
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 6
; LENGTH: 155
; TYPE: PRT
; ORGANISM: Bos taurus
US-09-886-856-6

Query Match 100.0%; Score 787; DB 10; Length 155;
Best Local Similarity 100.0%; Pred. No. 4.8e-75;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Db 10 PALPEDGGGGAFFPGHFKDPKRLKCKNGGFLLRIHPDGRVNDGVRKSDPHIKLOLAER 69
QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 120
Db 70 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 129
QY 121 TGQYKLGKPTGPGOKAILFLPMSAKS 146
Db 130 TGQYKLGKPTGPGOKAILFLPMSAKS 155

RESULT 7
US-10-131-965-3
; Sequence 3, Application US/10131965
; Patent No. US20020165160A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha J.
; APPLICANT: Kavanaugh, Michael W.
; TITLE OF INVENTION: Angiogenically Effective Unit Dose of FGF and Method of
; TITLE OF INVENTION: Administering
; FILE REFERENCE: 1296/12169US05
; CURRENT APPLICATION NUMBER: US/10/131,965
; CURRENT FILING DATE: 2002-04-25
; PRIOR APPLICATION NUMBER: US/09/417,721
; PRIOR FILING DATE: 1999-10-13
; PRIOR APPLICATION NUMBER: 60/104,103
; PRIOR FILING DATE: 1998-10-13
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NUMBER OF SEQ ID NOS: 15
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 3
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Human FGF-2
US-10-131-965-3

Query Match 98.6%; Score 776; DB 9; Length 146;
Best Local Similarity 98.6%; Pred. No. 6.3e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 PALPEDGGGGAFFPGHFKDPKRLKCKNGGFLLRIHPDGRVNDGVRKSDPHIKLOLAER 60
Db 1 PALPEDGGGGAFFPGHFKDPKRLKCKNGGFLLRIHPDGRVNDGVRKSDPHIKLOLAER 60
QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 120
Db 61 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 120
QY 121 TGQYKLGKPTGPGOKAILFLPMSAKS 146
Db 121 TGQYKLGKPTGPGOKAILFLPMSAKS 146

RESULT 8
US-09-802-365-4
; Sequence 4, Application US/09802365
; Patent No. US20020032153A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment and Prevention of Erectile Dysfunction
; FILE REFERENCE: 1671.003
; CURRENT APPLICATION NUMBER: US/09/802,365
; PRIOR FILING DATE: 2001-03-09
; PRIOR APPLICATION NUMBER: 60/188,480
; PRIOR FILING DATE: 2000-03-10
; PRIOR APPLICATION NUMBER: 60/203,415
; PRIOR FILING DATE: 2000-05-11
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-802-365-4

Query Match 98.6%; Score 776; DB 10; Length 146;
Best Local Similarity 98.6%; Pred. No. 6.3e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
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Db 1 PALPEDGGGGAFFPGHFKDPKRLKCKNGGFLLRIHPDGRVNDGVRKSDPHIKLOLAER 60
QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 120
Db 61 GVSISIKVCANRYLAMKEDGRLLASCKVTDECFEERLESNNYNTYRSRKYSSWYALKR 120
QY 121 TGQYKLGKPTGPGOKAILFLPMSAKS 146
Db 121 TGQYKLGKPTGPGOKAILFLPMSAKS 146

RESULT 9
US-09-886-856-4
; Sequence 4, Application US/09886856
; Patent No. US20020115603A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment of Peripheral Artery Disease
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FILE REFERENCE: P16090.004
CURRENT APPLICATION NUMBER: US/09/886,856
CURRENT FILING DATE: 2001-06-21
PRIOR APPLICATION NUMBER: 60/213,504
PRIOR FILING DATE: 2000-06-22
PRIOR APPLICATION NUMBER: 60/264,572
PRIOR FILING DATE: 2000-01-26
PRIOR APPLICATION NUMBER: 60/276,549
PRIOR FILING DATE: 2001-03-16
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 4
LENGTH: 146
TYPE: PRT
ORGANISM: Homo sapiens
US-09-886-856-4

Query Match 98.6%; Score 776; DB 10; Length 146;
Best Local Similarity 98.6%; Pred. No. 6.7e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

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DB 1 PALPEDGSGAFPFGHKKDKRRLCYCKNGGFFLRHPDGRVDGYREKSDPHIKIQLQAEER 60
QY 61 GVSISIKVCANRYLAMKEDGRLASKCVTDECEFFERLESNNNTYRSRYSSWYVALKR 120
DB 61 GVSISIKVCANRYLAMKEDGRLASKCVTDECEFFERLESNNNTYRSRYSSWYVALKR 120
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
DB 121 TGOYKLGSKTGPQKAILFLPMSAKS 146

RESULT 10
US-09-822-485-5

Sequence 5, Application US/09822485
Patent No. US2002001825A1
GENERAL INFORMATION:
APPLICANT: Itch, No. US20020001825A1uyuki
TITLE OF INVENTION: No. US20020001825A1el Fibroblast Growth Factor-Like Polypeptides
FILE REFERENCE: 08035.0001-01000
CURRENT APPLICATION NUMBER: US/09/822,485
CURRENT FILING DATE: 2001-04-02
NUMBER OF SEQ ID NOS: 35
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 5
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
PUBLICATION INFORMATION:
JOURNAL: EMBO J.
VOLUME: 5
PAGES: 2523-2528
DATE: 1986
US-09-822-485-5

Query Match 98.6%; Score 776; DB 10; Length 155;
Best Local Similarity 98.6%; Pred. No. 6.7e-74;

Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHKKDKRRLCYCKNGGFFLRHPDGRVDGYREKSDPHIKIQLQAEER 60
DB 10 PALPEDGSGAFPFGHKKDKRRLCYCKNGGFFLRHPDGRVDGYREKSDPHIKIQLQAEER 69
QY 61 GVSISIKVCANRYLAMKEDGRLASKCVTDECEFFERLESNNNTYRSRYSSWYVALKR 120
DB 70 GVSISIKVCANRYLAMKEDGRLASKCVTDECEFFERLESNNNTYRSRYSSWYVALKR 129
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 11
US-09-802-365-8

Sequence 8, Application US/09802365
Patent No. US20020032153A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha Jo
TITLE OF INVENTION: Methods and Compositions for the Treatment and Prevention of Erectile Dysfunction
FILE REFERENCE: 1671.003
CURRENT APPLICATION NUMBER: US/09/802,365
CURRENT FILING DATE: 2001-03-09
PRIOR APPLICATION NUMBER: 60/188,480
PRIOR FILING DATE: 2000-03-10
PRIOR APPLICATION NUMBER: 60/203,415
PRIOR FILING DATE: 2000-05-11
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 8
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-802-365-8

Query Match 98.6%; Score 776; DB 10; Length 155;
Best Local Similarity 98.6%; Pred. No. 6.7e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHKKDKRRLCYCKNGGFFLRHPDGRVDGYREKSDPHIKIQLQAEER 60
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QY 61 GVSISIKVCANRYLAMKEDGRLASKCVTDECEFFERLESNNNTYRSRYSSWYVALKR 120
DB 70 GVSISIKVCANRYLAMKEDGRLASKCVTDECEFFERLESNNNTYRSRYSSWYVALKR 129
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 12

US-09-251-263-10
Sequence 10, Application US/09251263
Patent No. US20020052477A1
GENERAL INFORMATION:
APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
FILE REFERENCE: 07265/047003
CURRENT APPLICATION NUMBER: US/09/251,263
CURRENT FILING DATE: 1999-02-16
EARLIER APPLICATION NUMBER: 08/867,471
EARLIER FILING DATE: 1997-06-02
EARLIER APPLICATION NUMBER: 08/439,725
EARLIER FILING DATE: 1995-05-12
NUMBER OF SEQ ID NOS: 15
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 10
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-251-263-10

Query Match 98.6%; Score 776; DB 10; Length 155;
Best Local Similarity 98.6%; Pred. No. 6.7e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

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DB 10 PALPEDGSGAFPFGHKKDKRRLCYCKNGGFFLRHPDGRVDGYREKSDPHIKIQLQAEER 69


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QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 120
DB 70 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 129
QY 121 TGQYKLGSKTGPQOKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPQOKAILFLPMSAKS 155

RESULT 13
US-09-425-021-10
; Sequence 10, Application US/09425021
; Patent No. US20020076748A1
; GENERAL INFORMATION:
; APPLICANT: Greene, John M.
; APPLICANT: Rosen, Craig A.
; TITLE OF INVENTION: Fibroblast Growth Factor 15
; FILE REFERENCE: PF203D1
; CURRENT APPLICATION NUMBER: US/09/425,021
; CURRENT FILING DATE: 1999-10-25
; EARLIER APPLICATION NUMBER: 09/103,079
; EARLIER FILING DATE: 1998-06-23
; NUMBER OF SEQ ID NOS: 32
; SOFTWARE: Patent Ver. 2.0
; SEQ ID NO 10
; LENGTH: 155
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-425-021-10

Query Match          98.6%; Score 776; DB 10; Length 155;
Best Local Similarity 98.6%; Pred. No. 6.7e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHIKLOLAER 60
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QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 120
DB 70 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 129
QY 121 TGQYKLGSKTGPQOKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPQOKAILFLPMSAKS 155

RESULT 14
US-09-886-856-8
; Sequence 8, Application US/09886856
; Patent No. US20020115603A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; FILE REFERENCE: PPI6090.004
; CURRENT APPLICATION NUMBER: US/09/886,856
; CURRENT FILING DATE: 2001-06-21
; PRIOR APPLICATION NUMBER: 60/213,504
; PRIOR FILING DATE: 2000-06-22
; PRIOR FILING DATE: 2000-01-26
; PRIOR APPLICATION NUMBER: 60/264,572
; PRIOR FILING DATE: 2001-03-16
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 8
; LENGTH: 155
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-886-856-8
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Query Match          98.6%; Score 776; DB 10; Length 155;
Best Local Similarity 98.6%; Pred. No. 6.7e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHIKLOLAER 60
DB 10 PALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHIKLOLAER 69
QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 120
DB 70 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 129
QY 121 TGQYKLGSKTGPQOKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPQOKAILFLPMSAKS 155

RESULT 15
US-09-749-728B-7
; Sequence 7, Application US/09749728B
; Patent No. US20020142457A1
; GENERAL INFORMATION:
; APPLICANT: Umezawa, Akhiro
; APPLICANT: Hata, Jun-ichi
; APPLICANT: Ogawa, Satoshi
; APPLICANT: Sakurada, Kazuhiko
; APPLICANT: Gojo, Satoshi
; APPLICANT: Yamada, Yoji
; TITLE OF INVENTION: THE CELL HAVING THE POTENTIALITY OF DIFFERENTIATION INFO CARD
; FILE REFERENCE: 00766.000043
; CURRENT APPLICATION NUMBER: US/09/749,728B
; CURRENT FILING DATE: 2001-09-17
; PRIOR APPLICATION NUMBER: H11-372826
; PRIOR FILING DATE: 1999-12-28
; PRIOR APPLICATION NUMBER: PCT-JP00-01148
; PRIOR FILING DATE: 2000-02-28
; PRIOR APPLICATION NUMBER: PCT-JP00-07741
; PRIOR FILING DATE: 2000-11-02
; NUMBER OF SEQ ID NOS: 80
; SOFTWARE: Patent Ver. 2.0
; SEQ ID NO 7
; LENGTH: 155
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-749-728B-7

Query Match          98.6%; Score 776; DB 10; Length 155;
Best Local Similarity 98.6%; Pred. No. 6.7e-74;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHIKLOLAER 60
DB 10 PALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHIKLOLAER 69
QY 61 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 120
DB 70 GVSISIKVCANRYLAMKEDGRLLASCKVYDCEFFERLESNNYTSRKYSSWYALKR 129
QY 121 TGQYKLGSKTGPQOKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPQOKAILFLPMSAKS 155

Search completed: December 4, 2002, 11:13:09
Job time : 8.5 secs
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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:09:23 : Search time 14.5 Seconds
(without alignments)
967.974 Million cell updates/sec

Title: US-09-886-856-2

Perfect score: 787

Sequence: 1 PALPDDGGSGAFPPGHFKDP.....GPKTGPCKALLFLPMSAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : PIR-73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----------|--------------------|
| 1 | 787 | 100.0 | 157 | 1 GKBOB | basic fibroblast g |
| 2 | 781 | 99.2 | 146 | 1 S00185 | basic fibroblast g |
| 3 | 776 | 98.6 | 210 | 2 A32398 | basic fibroblast g |
| 4 | 759.5 | 96.5 | 154 | 2 A31674 | basic fibroblast g |
| 5 | 754.5 | 95.9 | 154 | 2 C37360 | basic fibroblast g |
| 6 | 736 | 93.5 | 137 | 2 I46711 | fibroblast growth |
| 7 | 734 | 93.3 | 189 | 2 A48834 | basic fibroblast g |
| 8 | 717.5 | 91.2 | 164 | 2 S31622 | basic fibroblast g |
| 9 | 644 | 81.8 | 155 | 1 A40117 | basic fibroblast g |
| 10 | 425.5 | 54.1 | 125 | 2 A32484 | basic fibroblast g |
| 11 | 405 | 51.5 | 155 | 1 A60721 | acidic fibroblast |
| 12 | 395 | 50.2 | 155 | 1 A33665 | acidic fibroblast |
| 13 | 392.5 | 49.9 | 155 | 2 A60130 | acidic fibroblast |
| 14 | 391 | 49.7 | 155 | 2 S04147 | acidic fibroblast |
| 15 | 391 | 49.4 | 155 | 2 D37360 | acidic fibroblast |
| 16 | 389 | 49.4 | 152 | 2 JH0476 | acidic fibroblast |
| 17 | 387 | 49.2 | 155 | 2 JH0055 | acidic fibroblast |
| 18 | 384 | 48.8 | 155 | 1 GKBOA | acidic fibroblast |
| 19 | 252 | 32.0 | 194 | 2 I50710 | fibroblast growth |
| 20 | 251.5 | 32.0 | 256 | 2 J04627 | fibroblast growth |
| 21 | 249.5 | 31.7 | 264 | 2 A36207 | fibroblast growth |
| 22 | 249.5 | 31.3 | 266 | 2 S68144 | fibroblast growth |
| 23 | 246 | 31.3 | 220 | 2 I50588 | fibroblast growth |
| 24 | 245.5 | 31.2 | 206 | 1 TVH085 | fibroblast growth |
| 25 | 245 | 31.1 | 208 | 2 S20102 | fibroblast growth |
| 26 | 245 | 31.1 | 208 | 2 S14192 | fibroblast growth |
| 27 | 242.5 | 30.8 | 206 | 2 J04268 | fibroblast growth |
| 28 | 241 | 30.6 | 267 | 1 TVH085 | fibroblast growth |
| 29 | 236 | 30.0 | 187 | 2 S23595 | embryonic fibrobla |

| | | | | | | |
|----|-------|------|-----|---|--------|--------------------|
| 30 | 235.5 | 29.9 | 237 | 1 | S39582 | transforming prote |
| 31 | 235 | 29.9 | 245 | 1 | TVMS72 | transforming prote |
| 32 | 234 | 29.7 | 239 | 1 | S04742 | fibroblast growth |
| 33 | 232.5 | 29.5 | 202 | 1 | TVMSHS | fibroblast growth |
| 34 | 231.5 | 29.4 | 192 | 2 | S54407 | embryonic fibrobla |
| 35 | 215 | 27.3 | 208 | 2 | S66486 | fibroblast growth |
| 36 | 215 | 27.3 | 208 | 2 | A48137 | fibroblast growth |
| 37 | 209 | 26.6 | 211 | 2 | J07353 | fibroblast growth |
| 38 | 207 | 26.3 | 208 | 2 | J07082 | fibroblast somatoc |
| 39 | 206.5 | 26.2 | 207 | 2 | J05940 | fibroblast growth |
| 40 | 205.5 | 26.1 | 207 | 2 | J05941 | fibroblast growth |
| 41 | 204.5 | 26.0 | 194 | 2 | I46610 | keratinocyte growt |
| 42 | 203 | 25.8 | 212 | 2 | J07511 | fibroblast growth |
| 43 | 202.5 | 25.7 | 194 | 1 | A36301 | fibroblast growth |
| 44 | 202.5 | 25.7 | 194 | 2 | S26049 | fibroblast growth |
| 45 | 202.5 | 25.7 | 194 | 2 | S49501 | keratinocyte growt |

ALIGNMENTS

RESULT 1

GKBOB

basic fibroblast growth factor precursor - bovine (fragment)

N:Alternate names: bFGF; kidney-derived growth factor; prostatiopl

C:Species: Bos primigenius taurus (cattle)

C>Date: 13-Aug-1986 #sequence_revision 02-Jun-1995 #ext_change 24-Nov-1999

C/Accession: A24663; A32878; A33784; A61550; A60310; A61094; A01386; A60316;

R:Abraham, J.A.; Mergia, A.; Whang, J.L.; Tumolo, A.; Friedland, K.A.; Science 233, 545-548, 1986

A:Title: Nucleotide sequence of a bovine clone encoding the angiogenic protein, basi

A:Reference number: A94290; MUID:86261806; PMID:2425435

A:Accession: A24663

A:Molecule type: mRNA

A:Residues: 3-157 <AB2>

A:Cross-references: GB:M13440; NID:q163049; PIDN:AAA30518.1; PID:q163050

A:Experimental source: pituitary gland

R:Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Fiddes, J.C. Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986

A:Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organiza

A:Reference number: A90924; MUID:87217066; PMID:3472745

A:Accession: A33784

A:Molecule type: protein

A:Residues: 1-14 <M15>

A:Note: demonstration of a possible alternative initiator or splice junction

R:Berthoin, J.; Hearn, M.T.W. Mol. Cell. Endocrinol. 51, 187-199, 1987

A:Title: Isolation, characterization and tissue localisation of an N-terminal-trunca

A:Reference number: A61550; MUID:67247652; PMID:3556000

A:Accession: A61550

A:Molecule type: protein

A:Residues: 16-35 <BER>

R:Ueno, N.; Baird, A.; Esch, F.; Ling, N.; Gullermin, R. Mol. Cell. Endocrinol. 49, 189-194, 1987

A:Title: Isolation and partial characterization of basic fibroblast growth factor fr

A:Reference number: A61551; MUID:87162856; PMID:3556754

A:Accession: A61551

A:Molecule type: protein

A:Residues: 27-35, 'X', '37-41 <UE3>

A:Experimental source: testes

A:Note: this form appears to be identical to the renal form

R:Ueno, N.; Baird, A.; Esch, F.; Shimazaki, S.; Ling, N.; Gullermin, R. Regul. Pept. 16, 135-145, 1986

A:Title: Purification and partial characterization of a mitogenic factor from bovine

A:Reference number: A60310; MUID:87119165; PMID:3809608

A:Accession: A60310

A: Molecule type: protein
 A: Residues: 23-35, 'X', 37-42 <DEN>
 A: Experimental source: liver
 A: Species: N. Baird, A.; Esch, F.; Ling, N.; Guillemin, R.
 Biochem. Biophys. Res. Commun. 138, 580-588, 1986
 A: Title: Isolation of an amino terminal extended form of basic fibroblast growth factor.
 A: Reference number: A24819; MUID:66295737; PMID:3741423
 A: Contents: annotation
 A: Note: the amino end of this form was blocked; the peptide composition matched what was
 R: Gospodarowicz, D.; Baird, A.; Cheng, J.; Lui, G.M.; Esch, F.; Bohlen, P.
 Endocrinology 118, 82-90, 1986
 A: Title: Isolation of fibroblast growth factor from bovine adrenal gland: physicochemical
 A: Reference number: A61094; MUID:66081530; PMID:3940857
 A: Accession: A61094
 A: Molecule type: protein
 A: Residues: 12-25, 27-35, 'X', 37-40 <GOS>
 A: Experimental source: adrenal gland
 A: Species: N. Baird, A.; Ling, N.; Ueno, N.; Hall, F.; Denoroy, L.; Klepper, R.; Gospodarowicz, D.
 Proc. Natl. Acad. Sci. U.S.A. 82, 6507-6511, 1985
 A: Title: Primary structure of bovine pituitary basic fibroblast growth factor (FGF) and
 A: Reference number: A01386; MUID:86016731; PMID:3863109
 A: Accession: A01386
 A: Molecule type: protein
 A: Residues: 12-157 <ESC>
 A: Experimental source: pituitary gland
 A: Species: R. Baird, A.; Esch, F.; Bohlen, P.; Ling, N.; Gospodarowicz, D.
 Regul. Pept. 12, 201-213, 1985
 A: Title: Isolation and partial characterization of an endothelial cell growth factor frc
 A: Reference number: A60316; MUID:86095426; PMID:4081126
 A: Accession: A60316
 A: Molecule type: protein
 A: Residues: 27-35, 'X', 37-43 <BAI>
 A: Experimental source: kidney
 A: Species: R. Baird, A.; Esch, F.; Ling, N.; Gospodarowicz, D.
 Proc. Natl. Acad. Sci. U.S.A. 81, 5364-5368, 1984
 A: Title: Isolation and partial molecular characterization of pituitary fibroblast growth
 A: Reference number: A22054; MUID:84296139; PMID:6591194
 A: Accession: A22054
 A: Molecule type: protein
 A: Residues: 12-26 <BOH>
 A: Comment: The acidic and basic fibroblast growth factors are the major endothelial-cell
 all types in vitro (although bFGF is 30-100 times more potent than aFGF in stimulating t
 C: Comment: This protein binds heparin more strongly than does aFGF.
 C: Superfamily: fibroblast growth factor
 C: Keywords: alternative splicing; angiogenesis; blocked amino end; growth factor; hepari
 F: 1-157/Product: basic fibroblast growth factor, uterine form #status predicted <MAT1>
 F: 4-157/Product: basic fibroblast growth factor, pituitary gamma form #status experiment
 F: 12-157/Product: basic fibroblast growth factor, pituitary alpha form #status experiment
 F: 16-157/Product: basic fibroblast growth factor, pituitary short form #status predicted
 F: 23-157/Product: basic fibroblast growth factor, hepatic form #status experimental <MAT
 F: 29-33, 118-121/Region: heparin binding #status predicted
 F: 4/Modified site: blocked amino end (Ala) (in mature form pituitary gamma) (probably ac

Query Match 100.0%; Score 787; DB 1; Length 157;
 Best Local Similarity 100.0%; Pred. No. 3, 3e-71;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 PALPDGSGAFPPGHFDPKRLTYCKNGGFLRIHPDGRVGVREKSDPHIKLOQAEER 60
 |||||
 Db 12 PALPDGSGAFPPGHFDPKRLTYCKNGGFLRIHPDGRVGVREKSDPHIKLOQAEER 71
 Oy 61 GVSIKGVANRYLAKMEDGRLASKCVTDECFEERLESNNYNTYRSKYSWYALKR 120
 |||||
 Db 72 GVSIKGVANRYLAKMEDGRLASKCVTDECFEERLESNNYNTYRSKYSWYALKR 131
 Oy 121 TGQYKLGPKTGPQKALIFLPMASAKS 146
 |||||
 Db 132 TGQYKLGPKTGPQKALIFLPMASAKS 157

RESULT 2
 S02185

basic fibroblast growth factor - sheep
 N: Alternate names: prostactropin
 C: Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
 C: Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
 R: Accession: S00185
 R: Simpson, R.J.; Moritz, R.L.; Lloyd, C.J.; Fabrl, L.J.; Nice, E.C.; Rubira, M.R.; Bu
 FEBS Lett. 224, 128-132, 1987
 A: Title: Primary structure of ovine pituitary basic fibroblast growth factor.
 A: Reference number: S00185; MUID:88055577; PMID:3678486
 A: Accession: S00185
 A: Molecule type: protein
 A: Residues: 1-146 <STM>
 C: Superfamily: fibroblast growth factor
 C: Keywords: growth factor; heparin binding; mitogen
 F: 18-22/Region: heparin binding #status predicted
 F: 107-110/Region: heparin binding #status predicted

Query Match 99.2%; Score 781; DB 1; Length 146;
 Best Local Similarity 99.3%; Pred. No. 1, 2e-70;
 Matches 145; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Oy 1 PALPDGSGAFPPGHFDPKRLTYCKNGGFLRIHPDGRVGVREKSDPHIKLOQAEER 60
 |||||
 Db 1 PALPDGSGAFPPGHFDPKRLTYCKNGGFLRIHPDGRVGVREKSDPHIKLOQAEER 60
 Oy 61 GVSIKGVANRYLAKMEDGRLASKCVTDECFEERLESNNYNTYRSKYSWYALKR 120
 |||||
 Db 61 GVSIKGVANRYLAKMEDGRLASKCVTDECFEERLESNNYNTYRSKYSWYALKR 120
 Oy 121 TGQYKLGPKTGPQKALIFLPMASAKS 146
 |||||
 Db 121 TGQYKLGPKTGPQKALIFLPMASAKS 146

RESULT 3

basic fibroblast growth factor precursor, 22.5K form - human
 N: Alternate names: bFGF; fibroblast growth factor 2; prostatic growth factor; prostat
 C: Species: Homo sapiens (man)
 C: Date: 31-Jul-1999 #sequence_revision 31-Dec-1993 #text_change 21-Jul-2000
 R: Accession: A32398; A61537; A26642; B32878; S00297; A54316; B54316; A33624; A25824;
 R: Plets, H.; Kaghad, M.; Plets, A.C.; Klagesbun, M.; Lellis, J.M.; Lianzun, P.; Chalo
 Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1989
 A: Title: High molecular mass forms of basic fibroblast growth factor are initiated by
 A: Reference number: A32398; MUID:89184522; PMID:2538817
 A: Accession: A32398
 A: Molecule type: mRNA
 A: Residues: 1-210 <PRA>
 A: Cross-references: GB:004513; NID:g183083; PIDN:AAA52531.1; PID:g459811
 R: Shibata, F.; Baird, A.; Florjalewicz, R. Z.
 Growth Factors 4, 277-287, 1991
 A: Title: Functional characterization of the human basic fibroblast growth factor gene
 A: Reference number: A61537; MUID:92110035; PMID:1764264
 A: Accession: A61537
 A: Molecule type: DNA
 A: Residues: 1-114 <SHI>
 A: Note: authors translated the codon GGA for residue 47 as Ala
 R: Kurokawa, T.; Sasada, R.; Iwane, M.; Igarashi, K.
 FEBS Lett. 213, 189-194, 1987
 A: Title: Cloning and expression of cDNA encoding human basic fibroblast growth factor
 A: Reference number: A26642; MUID:87162468; PMID:2435575
 A: Accession: A26642
 A: Molecule type: mRNA
 A: Residues: 56-210 <CUR>
 A: Cross-references: GB:M27968; NID:g182562; PIDN:AAA52448.1; PID:g182563
 R: Abraham, J.A.; Whang, J.L.; Tumolo, A.; Megala, A.; Fides, J.C.
 Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
 A: Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organizat
 A: Reference number: A90924; MUID:87217066; PMID:3472745
 A: Accession: B32878
 A: Molecule type: mRNA
 A: Residues: 56-210 <ABR>

A>Note: the authors translated the codon GAA for residue 108 as Gly
 R.Abraham, J.A.; Wang, J.L.; Tundo, A.; Mergia, A.; Friedman, J.; Gospodarowicz, D.; F
 EMO J. 5, 2523-2528, 1986
 A>Title: Human basic fibroblast growth factor: nucleotide sequence and genomic organizat
 A:Reference number: S00297; MUID:87053817; PMID:3780670
 A:Accession: S00297
 A>Status: not compared with conceptual translation
 A:Molecule type: DNA
 A:Residues: 1-155 <AB2>
 A>Note: the authors translated the codon GAA for residue 108 as Gly
 R.Shimoyama, Y.; Gotoh, M.; Ino, Y.; Sakamoto, M.; Kato, K.; Hirohashi, S.
 Jpn. J. Cancer Res. 82, 1263-1270, 1991
 A>Title: Characterization of high-molecular-mass forms of basic fibroblast growth factor
 inogenesis.
 A:Reference number: A54316; MUID:92091228; PMID:1721615
 A:Accession: A54316
 A:Molecule type: Protein
 A:Residues: 'XX', 86-88, 'X', 90-91, 'X', 93-95 <SH3>
 A:Experimental source: C-1121 hepatocellular carcinoma cell line
 A>Note: sequence extracted from NCBI backbone (NCBI:P1595)
 A:Accession: B54316
 A:Molecule type: Protein
 A:Residues: 'XXX', 19, 'X', 21-29 <SH2>
 A>Note: sequence extracted from NCBI backbone (NCBI:P171594)
 R.Felge, J.D.; Bradley, J.D.; Fryburg, K.; Farris, J.; Consens, L.C.; Barr, P.J.; Baird,
 J. Cell Biol. 109, 3105-3114, 1989
 A>Title: Differential effects of heparin, fibronectin, and laminin on the phosphorylated
 A:Reference number: A33624; MUID:90078343; PMID:2592418
 A:Accession: A33624
 A>Status: preliminary
 A:Molecule type: Protein
 A:Residues: 57-77 <STO>
 A:Experimental source: prostate
 R.Gimenez-Gallardo, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 135, 541-548, 1986
 A>Title: Human brain-derived acidic and basic fibroblast growth factors: amino terminal
 A:Reference number: A90122; MUID:86186784; PMID:3964259
 A:Accession: B24243
 A:Molecule type: Protein
 A:Residues: 65-102, 'X', 104-105 <GIM>
 A:Experimental source: brain
 R.Gautschi, P.; Frater-Schroder, M.; Bohlen, P.
 FEBS Lett. 204, 203-207, 1986
 A>Title: Partial molecular characterization of endothelial cell mitogens from human brai
 A:Reference number: A91364; MUID:86252520; PMID:3732516
 A:Accession: B24301
 A:Molecule type: Protein
 A:Residues: 65-88, 'X', 90-98, 'X', 100 <GAU>
 R.Sommer, A.; Brewer, M.T.; Thompson, R.C.; Moscatelli, D.; Presta, M.; Rifkin, D.B.
 Biochem. Biophys. Res. Commun. 144, 543-550, 1987
 A>Title: A form of human basic fibroblast growth factor with an extended amino terminus.
 A:Reference number: S42242; MUID:87213238; PMID:3579930
 A:Accession: S42242
 A>Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 54-210 <SOM>
 A:Cross-references: EMBL:M17599; NID:g183086; PIDN:AAA52534.1; PID:g183087
 R.Panico, M.W.; Horlick, R.A.; Springer, B.A.; Van Dyk, D.E.; Tobery, T.; Wetmore, D
 Biochemistry 33, 10229-10248, 1994
 A>Title: Multivalent ligand-receptor binding interactions in the fibroblast growth factor
 A:Reference number: A55784; MUID:94347757; PMID:7520751
 A:Accession: B55784
 A:Molecule type: Protein
 A:Residues: 54-71 <PAN>
 R.Watson, R.; Anthony, F.; Pickett, M.; Lambden, P.; Masson, G.M.; Thomas, E.J.
 Biochem. Biophys. Res. Commun. 187, 1227-1231, 1992

A>Title: Reverse transcription with nested polymerase chain reaction shows expression
 of ten.
 A:Reference number: 152267; MUID:93038590; PMID:1417798
 A:Accession: 152267
 A>Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 95-182 <RES>
 A:Cross-references: GB:S47380; NID:g256535; PIDN:AA013653.1; PID:g4261553
 A:Experimental source: granulosa cells
 R.Patry, V.; Bugler, B.; Amalric, F.; Prone, J.C.; Prats, H.
 FEBS Lett. 349, 23-28, 1994
 A>Title: Purification and characterization of the 210-amino acid recombinant basic f
 A:Reference number: S46253; MUID:94320639; PMID:8045296
 A:Accession: S46253
 A:Molecule type: Protein
 A:Residues: 39-53; 65-88 <PAT>
 A>Note: recombinant gene expressed in Escherichia coli
 C:Genetics:
 A:Gene: GDB:FGF2; FGFR
 A:Cross-references: GDB:119910; OMIM:134920
 A:Map position: 4q25-4q27
 A:Start codon: CUG
 C:Superfamily: fibroblast growth factor
 C:Keywords: alternative initiators; angiogenesis; growth factor; heparin binding; mit
 F.1-210/Product: basic fibroblast growth factor, 22.5K form #status predicted <MA2>
 F.65-210/Product: basic fibroblast growth factor, 18K form #status predicted <MA2>
 F.182-86/Region: heparin binding #status predicted
 F.171-174/Region: heparin binding #status predicted
 Query Match 98.6%; Score 776; DB 2; Length 210;
 Best Local Similarity 98.6%; Pred. No. 5, 8e-70;
 Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 PALPEDGSGAPPPGPHKPKRLKCKNGGFLLRHDPGRVGRKSDPHIKLOAER 60
 DB 65 PALPEDGSGAPPPGPHKPKRLKCKNGGFLLRHDPGRVGRKSDPHIKLOAER 124
 QY 61 GVSIVKVCANRYLANKEDGRLLASKCVDECFERLESNNYNTYRSKYSWYALKR 120
 DB 125 GVSIVKVCANRYLANKEDGRLLASKCVDECFERLESNNYNTYRSKYSWYALKR 184
 QY 121 TGYKRGKPTGPGOKAIIPLPMSAKS 146
 DB 185 TGYKRGKPTGPGOKAIIPLPMSAKS 210
 RESULT 4
 A31674
 Basic fibroblast growth factor precursor - rat
 N:Alternate names: bFGF
 C:Species: Rattus norvegicus (Norway rat)
 C:Date: 21-May-1990 #sequence-revision 21-May-1990 #text-change 16-Jul-1999
 C:Accession: A31674; S00876; S24309
 R.Shimazaki, S.; Emoto, N.; Koba, A.; Mercado, M.; Shibata, F.; Coakey, K.; Baird, J
 Biochem. Biophys. Res. Commun. 137, 256-263, 1988
 A>Title: Complementary DNA cloning and sequencing of rat ovarian basic fibroblast gr
 A:Reference number: A31674; MUID:89061721; PMID:3196337
 A:Accession: A31674
 A:Molecule type: mRNA
 A:Residues: 1-154 <SH1>
 A:Cross-references: GB:M22427; NID:g204285; PIDN:AAA1210.1; PID:g204286
 R.Kurokawa, T.; Seno, M.; Igarashi, K.
 Nucleic Acids Res. 16, 5201, 1988
 A>Title: Nucleotide sequence of rat basic fibroblast growth factor cDNA.
 A:Reference number: S00876; MUID:88262516; PMID:3387229
 A:Accession: S00876
 A:Molecule type: mRNA
 A:Residues: 1-154 <KUR>
 A:Cross-references: EMBL:X07285; NID:g56203; PIDN:CAA30265.1; PID:g56204
 R.El-Husseini, A.E.D.; Patterson, J.A.; Myal, Y.; Shiu, R.P.C.
 Biochim. Biophys. Acta 1131, 314-316, 1992
 A>Title: PCR detection of the rat brain basic fibroblast growth factor (bFGF) mRNA c
 A:Reference number: S24309; MUID:92329546; PMID:1378302

```
basic fibroblast growth factor - short-tailed opossum (Monodelphis domestica) (fragment)
;Species: Monodelphis domestica
;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 12-Apr-1995
;Accession: S11622
Rikusewilt, D.F.; Sabourin, C.L.K.; Budge, C.L.; Ley, R.D.
```

submitted to the EMBL Data Library, September 1992

A:Description: Characterization of cDNA encoding basic fibroblast growth factor of the

A:Reference number: S31622

A:Accession: S31622

A>Status: preliminary

A:Molecule type: DNA

A:Residues: 1-164 <KUS>

A:Cross-references: EMBL:215154

C:Superfamily: fibroblast growth factor

Query Match 91.2%; Score 717.5; DB 2; Length 164;

Best Local Similarity 92.5%; Pred. No. 3e-64; Mismatches 6; Indels 1; Gaps 1;

Matches 136; Conservative 4; Mismatches 6; Indels 1; Gaps 1;

QY 1 PALPED-GSGAAPPFGHFKDPKRLCKNGGFRLRHPDGRVGVREKSDPHIKLOLAEE 59

DB 18 PALSGDGGGAPPPGFHFKDPKRLCKNGGFRLRHPDGRVGVREKSDPHIKLOLAEE 77

QY 60 RGVVSIKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSKYSWYVALK 119

DB 78 RGVVSIKVCANRYLAMKEDGRLLALKYTECEFFERLESNNNTYRSKYSWYVALK 137

QY 120 RTGOYKLGPKTGPQKALFLPMSAKS 146

DB 138 RTGOYKLGSKTGPQKALFLPMSAKS 164

RESULT 9

basic fibroblast growth factor - African clawed frog

C:Species: Xenopus laevis (African clawed frog)

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999

A:Accession: A40117; A29618

R:Kirmel, D.; Abrahams, J.A.; Haaparanta, T.; Pallis, T.M.; Kirschner, M.W.

Science 242, 1053-1056, 1998

A:Title: The presence of fibroblast growth factor in the frog egg: its role as a natural

A:Reference number: A40117; MUID:89058621; PMID:3194757

A:Accession: A40117

A>Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-155 <KIM>

A:Cross-references: GB:M18067; NID:g214177; PIDN:AAA49726.1; PID:g214178; GB:M21092

R:Kirmel, D.; Kirschner, M.

Cell 51, 869-877, 1987

A:Title: Synergistic induction of mesoderm by FGF and TGF-beta and the identification of

A:Reference number: A29618; MUID:88052890; PMID:3479265

A:Accession: A29618

A:Molecule type: mRNA

A:Residues: 95-110,112-155 <KIT>

C:Superfamily: fibroblast growth factor

C:Keywords: growth factor

Query Match 81.8%; Score 644; DB 1; Length 155;

Best Local Similarity 82.9%; Pred. No. 6.1e-57; Mismatches 17; Indels 0; Gaps 0;

Matches 121; Conservative 8; Mismatches 17; Indels 0; Gaps 0;

QY 1 PALPEDGSGAAPPFGHFKDPKRLCKNGGFRLRHPDGRVGVREKSDPHIKLOLAEE 60

DB 10 PTEBEDGNTFPSPGFRDKRLCKNGGFRLRINSDGRVGSNRKSDSHIKLOLAEE 69

QY 61 GVSIVKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSKYSWYVALK 120

DB 70 GVSIVKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSKYSWYVALK 129

QY 121 TGQYKLGPKTGPQKALFLPMSAKS 146

DB 130 TGQYKLGSKTGPQKALFLPMSAKS 155

RESULT 10

basic fibroblast growth factor precursor, 25k - guinea pig (fragments)

C:Species: Cavia porcellus (guinea pig)

C:Date: 20-Oct-1989 #sequence_revision 20-Oct-1989 #text_change 15-Jun-1996

C:Accession: A32484

R:Sommer, A.; Moscatelli, D.; Rifkin, D.B.

Biochem. Biophys. Res. Commun. 160, 1267-1274, 1989

A:Title: An amino-terminally extended and post-translationally modified form of a 25k

A:Reference number: A32484; MUID:89273588; PMID:2730645

A:Accession: A32484

A>Status: preliminary; nucleic acid sequence not shown; not compared with conceptual

A:Molecule type: mRNA

A:Residues: 1-125 <SOM>

C:Superfamily: fibroblast growth factor

Query Match 54.1%; Score 425.5; DB 2; Length 125;

Best Local Similarity 61.0%; Pred. No. 3e-35; Mismatches 5; Indels 51; Gaps 3;

Matches 89; Conservative 1; Mismatches 5; Indels 51; Gaps 3;

QY 1 PALPEDGSGAAPPFGHFKDPKRLCKNGGFRLRHPDGRVGVREKSDPHIKLOLAEE 60

DB 31 PALPEGDGAFFAFHFKDP-----NGGFRL-----LQLOAEDR 65

QY 61 GVSIVKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSKYSWYVALK 120

DB 66 -----CVTDECFEERLESNNNTYRSKYSWYVALK 99

QY 121 TGQYKLGPKTGPQKALFLPMSAKS 146

DB 100 TGQYKLGSKTGPQKALFLPMSAKS 125

RESULT 11

acidic fibroblast growth factor - golden hamster

N:Alternate names: heparin-binding growth factor 1

C:Species: Mesocricetus auratus (golden hamster)

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999

A:Accession: A60721

R:Hall, J.A.; Harris, M.A.; Malark, M.; Mansson, P.E.; Zhou, H.; Harris, S.E.

J. Cell. Biochem. 43, 17-26, 1990

A:Title: Characterization of the hamster DDF-1 cell aEGF/HGF-I gene and cDNA and its

A:Reference number: A60721; MUID:90270291; PMID:1693366

A:Accession: A60721

A>Status: not compared with conceptual translation

A:Molecule type: DNA

A:Residues: 1-155 <HAL>

C:Superfamily: fibroblast growth factor

C:Keywords: growth factor; heparin binding

Query Match 51.5%; Score 405; DB 1; Length 155;

Best Local Similarity 57.4%; Pred. No. 4.2e-33; Mismatches 39; Indels 2; Gaps 1;

Matches 78; Conservative 17; Mismatches 39; Indels 2; Gaps 1;

QY 13 PPGHFKDPKRLCKNGGFRLRHPDGRVGVREKSDPHIKLOLAEEGVVSIKVCANR 72

DB 19 PPGVTKKRLKLYCSNGGFRLRHPDGRVGVREKSDPHIKLOLAEEGVVSIKVCANR 78

QY 73 YLANKEGRLLASCVTDECFEERLESNNNTYRSKYS--SWYVALKRTGQYKLGPKT 130

DB 79 YLANMDTDLGSGQTPNECFLEERLENHNTYTSKHAENKNEVGLKNGSGCRGPR 138

QY 131 GPGKALFLPMSAKS 146

DB 139 HYGOKALFLPMSAKS 154

RESULT 12

acidic fibroblast growth factor 1 precursor [validated] - human

N:Alternate names: beta-ECGF; endothelial cell growth factor beta; heparin-binding

C:Species: Homo sapiens (man)

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 08-Dec-2000

A:Accession: A33657; A32316; S18217; A43804; A24662; JH0707; S35336; I39413;

R:Merga, A.; Tischer, E.; Graves, D.; Tumbolo, A.; Miller, J.; Gospodarowicz, D.; AT

Biochem. Biophys. Res. Commun. 164, 1121-1129, 1989

A:Title: Structural analysis of the gene for human acidic fibroblast growth factor.
 A:Reference number: A33665; MUID:90073637; PMID:2590193
 A:Accession: A33665
 A:Molecule type: DNA
 A:Residues: 1-155 <MER>
 A:Cross-references: GB:M30491
 R:Wang, W.P.; Lehtoma, K.; Varban, M.L.; Krishnan, I.; Chlu, I.M.
 Mol. Cell. Biol. 9 2387-2395, 1989
 A:Title: Cloning of the gene coding for human class I heparin-binding growth factor and
 A:Reference number: A32316; MUID:89343957; PMID:2474753
 A:Accession: A32316
 A:Molecule type: DNA
 A:Residues: 1-155 <MAN>
 A:Cross-references: GB:M23087; NID:9383875; PIDN:AAA52638.1; PID:9386768
 R:Wang, W.P.; Quixk, D.; Balcerzak, S.P.; Needleman, S.W.; Chlu, I.M.
 Oncogene 6, 1521-1529, 1991
 A:Title: Cloning and sequence analysis of the human acidic fibroblast growth factor gene
 A:Reference number: S18217; MUID:92019819; PMID:1717925
 A:Accession: S18217
 A:Molecule type: DNA
 A:Residues: 1-155 <MA>
 A:Cross-references: EMBL:M23086
 R:Chlu, I.M.; Wang, W.P.; Lehtoma, K.
 Oncogene 5, 755-762, 1990
 A:Title: Alternative splicing generates two forms of mRNA coding for human heparin-binding
 A:Reference number: A43804; MUID:90263618; PMID:1693186
 A:Accession: A43804
 A:Molecule type: mRNA
 A:Residues: 1-155 <CHT>
 A:Cross-references: EMBL:X51943; NID:932435; PIDN:CAA35206.1; PID:932436
 R:Ujaye, M.; Hawk, R.; Burgess, W.; Ritca, G.A.; Chlu, I.M.; Rivera, M.W.; O'Brien, S.J.;
 Solente, J.S.; 541-545, 1986
 A:Title: Human endothelial cell growth factor: cloning, nucleotide sequence, and chromos
 A:Reference number: A24662; MUID:86261805; PMID:3523756
 A:Accession: A24662
 A:Molecule type: mRNA
 A:Residues: 1-155 <RAY>
 A:Cross-references: GB:M13361; NID:9181941; PIDN:AAA79245.1; PID:9181942
 R:Yu, Y.L.; Kih, H.; Golden, J.A.; Mischel, A.A.; Goetzl, E.J.; Turck, C.W.
 J. Exp. Med. 175, 1073-1080, 1992
 A:Title: An acidic fibroblast growth factor protein generated by alternate splicing acts
 A:Reference number: JH0707; MUID:92202857; PMID:1372643
 A:Accession: JH0707
 A:Molecule type: mRNA
 A:Residues: 1-155 <YU>
 A:Cross-references: GB:X65778; NID:9396163; PIDN:CAA46661.1; PID:9396164
 R:Payson, R.A.; Canatan, H.; Chotani, M.A.; Wang, W.P.; Harris, S.E.; Myers, R.L.; Chlu,
 Nucleic Acids Res. 21, 489-495, 1993
 A:Title: Cloning of two novel forms of human acidic fibroblast growth factor (aFGF) mRNA
 A:Reference number: S35535; MUID:93181239; PMID:7680120
 A:Accession: S35535
 A:Molecule type: mRNA
 A:Residues: 1-58 <PAY>
 A:Cross-references: GB:L01485
 A:Accession: S35536
 A:Status: translation not shown
 A:Status: translation not shown
 A:Molecule type: RNA
 A:Residues: 1-58 <PA2>
 A:Cross-references: GB:L01487
 R:Crumley, G.; Dionne, C.A.; Jaye, M.
 Biochem. Biophys. Res. Commun. 171, 7-13, 1990
 A:Title: The gene for human acidic fibroblast growth factor encodes two upstream exons
 A:Reference number: I39413; MUID:90365758; PMID:2393407
 A:Accession: I39413
 A:Status: translation not shown
 A:Molecule type: mRNA
 A:Residues: 1-40 <RES>
 A:Cross-references: GB:M60515; NID:9178226; PIDN:AAA51672.1; PID:9553170; GB:M60516; NID
 R:Harper, J.W.; Struydom, D.J.; Lobb, R.R.
 Biochemistry 25, 4097-4103, 1986
 A:Reference number: A23553; MUID:86296647; PMID:2427112
 A:Accession: A23553

A:Molecule type: protein
 A:Residues: 16-155 <HAR>
 R:Glomez-gallego, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 138, 611-617, 1986
 A:Title: The complete amino acid sequence of human brain-derived acidic fibroblast gr
 A:Reference number: A24820; MUID:86295741; PMID:3527167
 A:Accession: A24820
 A:Molecule type: protein
 A:Residues: 16-155 <GIM>
 R:Glomez-gallego, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 135, 541-548, 1986
 A:Title: Human brain-derived acidic and basic fibroblast growth factors: amino termin
 A:Reference number: A90122; MUID:86186784; PMID:3964259
 A:Accession: A24243
 A:Molecule type: protein
 A:Residues: 16-47 <G12>
 A:Experimental source: brain
 R:Gautschi, P.; Frater-Schroder, M.; Bohlen, P.
 FEBS Lett. 204, 203-207, 1986
 A:Title: Partial molecular characterization of endothelial cell mitogens from human b
 A:Reference number: A91364; MUID:86275260; PMID:3732516
 A:Accession: A24301
 A:Molecule type: protein
 A:Residues: 16-30, 'X', 32-49 <GAN>
 R:Gautschi-Sova, P.; Muller, T.; Bohlen, P.
 Biochem. Biophys. Res. Commun. 140, 874-880, 1986
 A:Title: Amino acid sequence of human acidic fibroblast growth factor.
 A:Reference number: A26386; MUID:87048871; PMID:3778488
 A:Accession: A26386
 A:Molecule type: protein
 A:Residues: 16-155 <GAR>
 A:Experimental source: brain
 R:Chavan, A.J.; Haley, B.E.; Volkin, D.B.; Marfia, K.E.; Verticelli, A.M.; Bruner, M.
 Biochemistry 33, 7193-7202, 1994
 A:Title: Interaction of nucleotides with acidic fibroblast growth factor (FGF-1).
 A:Reference number: A53639; MUID:94271773; PMID:7516183
 A:Accession: A53639
 A:Molecule type: protein
 A:Residues: 16-30, 'X', 32-38, 73-75, 'X', 77-97, 'X', 99-101, 128-131, 'X', 133-140, 'X', 142-15
 C:Genetics:
 A:Gene: GDB:FGF1; FGFA
 A:Cross-references: GDB:119909; OMIM:131220
 A:Map position: 5q31.3-5q33.2
 A:Introns: 57/1; 91/3
 C:Superfamily: fibroblast growth factor
 C:Keywords: alternative splicing; growth factor; heparin binding
 F:16-155/Product: fibroblast growth factor 1 #status experimental <MAT>
 F:112/Binding site: carbohydrate (asn) (covalent) #status absent
 Query Match 50.2%; Score 395; DB 1; Length 155;
 Best Local Similarity 56.6%; Pred. No. 4.2e-32;
 Matches 77; Conservative 17; Mismatches 40; Indels 2; Gaps 1;
 QY 13 PGHFKDKRLAYCKNGGFLRIHPDGRVGEKSDPHKLOLQEEGVSIGKVCANR 72
 DB 19 PPGNTKKRKLCSNGHFLRLPDGTVDGTRSDQRIQLDLSSESGEVIYKSTENGQ 78
 QY 73 YLAMEKEDRLASCVTDECFEERLESNNVTYRSRKS--SWYVALKRTGQYKLPRT 130
 DB 79 YLAMDTDGLVSGQTPNECFLERLEENHYNTYISKRAEKNWVGKKNKSCRGPRPT 138
 QY 131 GPGOKAIFLPLMSAKS 146
 DB 139 HYGOKAIFLPLPVS 154
 -3SURF 13
 0130
 idic fibroblast growth factor - chicken
 Alternate names: endothelial cell growth factor
 Species: Gallus gallus (chicken)
 Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 16-Jul-1999
 Accession: A60130; S02639

RESULT 15
D37360

Search completed: December 4, 2002, 11:12:47
Job time : 15.5 secs

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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:06:33 ; Search time 8.5 Seconds
(without alignments)
712.417 Million cell updates/sec

Title: US-09-886-856-2

Perfect score: 787
Sequence: 1 PALPDDGGSGAFPPGHFKDP.....GPKTGPGRALLFLPMASAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%
Listing first 45 summaries

Database: SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----|-------------|
| 1 | 787 | 100.0 | 155 | 1 | FGF2_BOVIN |
| 2 | 781 | 99.2 | 155 | 1 | FGF2_SHEEP |
| 3 | 776 | 98.6 | 155 | 1 | FGF2_HUMAN |
| 4 | 759.5 | 96.5 | 154 | 1 | FGF2_RAT |
| 5 | 754.5 | 95.9 | 154 | 1 | FGF2_MOUSE |
| 6 | 736 | 93.5 | 137 | 1 | FGF2_RABIT |
| 7 | 734 | 93.3 | 158 | 1 | FGF2_CHICK |
| 8 | 717.5 | 91.2 | 156 | 1 | FGF2_MONDO |
| 9 | 644 | 81.8 | 155 | 1 | FGF2_XENLA |
| 10 | 405 | 51.5 | 155 | 1 | FGF1_MESAU |
| 11 | 395 | 50.2 | 155 | 1 | FGF1_HUMAN |
| 12 | 392.5 | 49.9 | 155 | 1 | FGF1_CHICK |
| 13 | 391 | 49.7 | 155 | 1 | FGF1_MOUSE |
| 14 | 389 | 49.4 | 152 | 1 | FGF1_PIG |
| 15 | 384 | 48.8 | 155 | 1 | FGF1_BOVIN |
| 16 | 252 | 32.0 | 194 | 1 | FGF4_CHICK |
| 17 | 251.5 | 32.0 | 256 | 1 | FGF3_BRARE |
| 18 | 249.5 | 31.7 | 264 | 1 | FGF5_MOUSE |
| 19 | 249.5 | 31.7 | 266 | 1 | FGF5_RAT |
| 20 | 246 | 31.3 | 220 | 1 | FGF3_CHICK |
| 21 | 245.5 | 31.2 | 206 | 1 | FGF4_HUMAN |
| 22 | 245 | 31.1 | 208 | 1 | FGF6_HUMAN |
| 23 | 245 | 31.1 | 208 | 1 | FGF6_MOUSE |
| 24 | 243.5 | 30.9 | 206 | 1 | FGF4_BOVIN |
| 25 | 241 | 30.6 | 268 | 1 | FGF5_HUMAN |
| 26 | 236 | 30.0 | 187 | 1 | FGF4_XENLA |
| 27 | 235.5 | 29.9 | 237 | 1 | FGF3_XENLA |
| 28 | 235 | 29.9 | 245 | 1 | FGF3_MOUSE |
| 29 | 234 | 29.7 | 239 | 1 | FGF3_HUMAN |
| 30 | 232.5 | 29.5 | 202 | 1 | FGF4_MOUSE |
| 31 | 231.5 | 29.4 | 192 | 1 | FGF8_XENLA |
| 32 | 215 | 27.3 | 208 | 1 | FGF9_HUMAN |
| 33 | 215 | 27.3 | 208 | 1 | FGF9_MOUSE |

| | | | | | | |
|----|-------|------|-----|---|------------|--------------------|
| 34 | 215 | 27.3 | 208 | 1 | FGF9_RAT | P36364 rattus norv |
| 35 | 211.5 | 26.9 | 209 | 1 | FGF9_XENLA | O91875 xenopus lae |
| 36 | 209 | 26.6 | 211 | 1 | FGF8_HUMAN | O90995 homo sapien |
| 37 | 206.5 | 26.2 | 207 | 1 | FGF8_RAT | O54769 rattus norv |
| 38 | 205.5 | 26.1 | 194 | 1 | FGF7_CANFA | P79150 canis famil |
| 39 | 205.5 | 26.1 | 207 | 1 | FGF8_HUMAN | O43320 homo sapien |
| 40 | 204.5 | 26.0 | 194 | 1 | FGF7_MOUSE | P36363 mus musculu |
| 41 | 203 | 25.8 | 208 | 1 | FGF4_HUMAN | O15520 homo sapien |
| 42 | 203 | 25.8 | 215 | 1 | FGF4_RAT | P70492 rattus norv |
| 43 | 202.5 | 25.7 | 194 | 1 | FGF7_HUMAN | P21781 homo sapien |
| 44 | 202.5 | 25.7 | 194 | 1 | FGF7_SHEEP | P48808 ovla aries |
| 45 | 200 | 25.4 | 209 | 1 | FGF4_MOUSE | O35565 mus musculu |

ALIGNMENTS

RESULT 1
FGF2_BOVIN STANDARD; PRT; 155 AA.
ID FGF2_BOVIN
AC P03969;
DT 23-OCT-1986 (Rel. 02, Created)
DT 23-OCT-1986 (Rel. 02, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatiotin) [Contains: Kidney-derived growth factor].
GN FGF2 OR FGF-2.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae; Bovinae; Bos.
OC NCBI_TaxID:9913;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-86261806; PubMed-2425435;
RA Abraham J.A., Mergia A., Whang J.L., Tumolo A., Friedman J., Hjertild K.A., Gospodarowicz D., Fiddes J.C.;
RT "Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic fibroblast growth factor.";
RL Science 233:545-548(1986).
[2]
RP SEQUENCE FROM N.A.
RX MEDLINE-87217066; PubMed-3472745;
RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.;
RT "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells.";
RL Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).
[3]
RP SEQUENCE OF 10-155.
RX MEDLINE-86016731; PubMed-3863109;
RA Esch F., Baird A., Ling N., Ueno N., Hill F., Denoroy L., Klepper R., Gospodarowicz D., Boehlen P., Guillemin R.;
RT "Primary structure of bovine pituitary basic fibroblast growth factor (bFGF) and comparison with the amino-terminal sequence of bovine brain acidic FGF.";
RL Proc. Natl. Acad. Sci. U.S.A. 82:6507-6511(1985).
[4]
RP SEQUENCE OF 1-9.
RX MEDLINE-86295737; PubMed-3741423;
RA Ueno N., Baird A., Esch F., Ling N., Guillemin R.;
RT "Isolation of an amino terminal extended form of basic fibroblast growth factor.";
RL Biochem. Biophys. Res. Commun. 138:580-588(1986).
[5]
RP SEQUENCE OF 25-41.
RX TISSUE-Kidney; PubMed-4081126;
RX MEDLINE-86095426;
RA Baird A., Esch F., Boehlen P., Ling N., Gospodarowicz D.;
RT "Isolation and partial characterization of an endothelial cell growth factor from the bovine kidney: homology with basic fibroblast growth factor.";
RL Regul. Pept. 12:201-213(1985).

[6]
 RN SEQUENCE OF 21-40.
 RP TISSUE-Kidney;
 RC MEDLINE-67119165; PubMed-3809608;
 RA Ueno N., Baird A., Esch F., Shimazaki S., Ling N., Gillemin R.;
 RT "Purification and partial characterization of a mitogenic factor from
 RT bovine liver: structural homology with basic fibroblast growth
 RT factor.";
 RL Regul. Pept. 16:135-145(1986).
 RN [7]
 RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
 RA MEDLINE-91095983; PubMed-1702556;
 RA Zhu X., Komiyama H., Chirino A., Faham S., Fox G.M., Arakawa T.,
 RA Hsu B.T., Rees D.C.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth
 RT factors.";
 RL Science 251:90-93(1991).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
 CC AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC -----
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 DR EMBL: M13440; AAA30518.1; -
 DR PIR: A24663; GKB0B.
 DR PIR: A24819; A24819.
 DR PIR: A32878; A32878.
 DR PDB: 1BAS; 31-OCT-93.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.
 DR PRINTS: PR00262; IL1HBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF_1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding;
 KW 3D-structure.
 KW PROPEP 1 9
 FT CHAIN 10 155 HEPARIN-BINDING GROWTH FACTOR 2.
 FT SITE 25 155 KIDNEY-DERIVED GROWTH FACTOR.
 FT SITE 46 48 CELL ATTACHMENT SITE (POTENTIAL).
 FT BINDING 88 90 CELL ATTACHMENT SITE (POTENTIAL).
 FT BINDING 27 31 HEPARIN (POTENTIAL).
 FT STRAND 116 119 HEPARIN (POTENTIAL).
 FT TURN 30 34
 FT TURN 35 38
 FT TURN 39 43
 FT TURN 45 46
 FT STRAND 49 52
 FT TURN 55 56
 FT HELIX 58 60
 FT STRAND 62 68
 FT TURN 69 70
 FT STRAND 71 76
 FT TURN 77 80
 FT STRAND 81 85
 FT TURN 87 88
 FT STRAND 91 94
 FT HELIX 99 101
 FT STRAND 103 107
 FT TURN 109 110
 FT STRAND 113 117

FT TURN 121 122
 FT STRAND 124 124
 FT STRAND 127 127
 FT TURN 129 130
 FT STRAND 133 133
 FT HELIX 136 138
 FT TURN 141 142
 FT HELIX 144 146
 FT STRAND 148 151
 SQ SEQUENCE 155 AA; 17250 MW; BE6CE70FA6107129 CRC64;
 Query Match 100.0%; Score 787; DB 1; Length 155;
 Best Local Similarity 100.0%; Pred. No. 4,7e-75;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PALPDEGGGAFPPGHEPRKRLCKNGGFFLRHPDGVGVREKSPHIKLOAEER 60
 DB 10 PALPDEGGGAFPPGHEPRKRLCKNGGFFLRHPDGVGVREKSPHIKLOAEER 69
 QY 61 GVASIKGVCANRYLAMEDGRLASKCYTDCFFERLESNNYTRSRKYSWYVALKR 120
 DB 70 GVASIKGVCANRYLAMEDGRLASKCYTDCFFERLESNNYTRSRKYSWYVALKR 129
 QY 121 TGQYKLGPTGPGKALFLPMSAKS 146
 DB 130 TGQYKLGPTGPGKALFLPMSAKS 155
 RESULT 2
 FGF2_SHEEP
 ID FGF2_SHEEP STANDARD; PRT; 155 AA.
 AC P20003;
 DT 01-FEB-1991 (Rel. 17, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
 DE growth factor) (BFGF) (Prostatropin).
 GN FGF2 OR FGF-2.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 OX NCBI_TaxId:9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Sutton R., Ward W.G., Raphael K.A., Cam G.R.;
 RL Submitted (SEP-1994) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE OF 9-155.
 RA MEDLINE-88055577; PubMed-3678486;
 RA Simpson R.J., Moritz R.L., Lloyd C.J., Fabri L.J., Nice E.C.,
 RA Rudira M.R., Burgess A.W.;
 RT "Primary structure of ovine pituitary basic fibroblast growth
 RT factor.";
 RL FEBS Lett. 224:128-132(1987).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
 CC AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL: L36136; AAA31519.1; -

DR PIR: S00185; S00185.
 DR HSPF: P09038; 1BFF.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL_HBGF.
 DR Pfam: PF00167; FGF; 1.
 DR PRINTS: PR00262; ILHBGF.
 DR PRODOM: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF; 1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 DR Growth factor: Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1 155 HEPARIN-BINDING GROWTH FACTOR 2.
 FT CHAIN 10 9
 FT SITE 45 48 CELL ATTACHMENT SITE (POTENTIAL).
 FT SITE 87 90 CELL ATTACHMENT SITE (POTENTIAL).
 FT BINDING 27 31 HEPARIN (POTENTIAL).
 FT BINDING 116 119 HEPARIN (POTENTIAL).
 SQ SEQUENCE 155 AA; 17280 MW; B5F2364BA610606D CRC64;

Query Match 99.2%; Score 781; DB 1; Length 155;
 Best Local Similarity 99.3%; Pred. No. 2e-74;
 Matches 145; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGGGAPPGHFKDPKRLCYCKNGGFPLRIHPDGRVDYREKSDPHIKLQAEER 60
 DB 10 PALPEDGGSSAPPPGFHKDPKRLCYCKNGGFPLRIHPDGRVDYREKSDPHIKLQAEER 69
 QY 61 GVSISGVANRYLAKMKEDGRLLASKCVDCEFFERLESNNNTYRSRKYSSMYALKR 120
 DB 70 GVSISGVANRYLAKMKEDGRLLASKCVDCEFFERLESNNNTYRSRKYSSMYALKR 129

QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
 DB 130 TGOYKLGPKTGPQKAILFLPMSAKS 155

RESULT 3
 FGF2_HUMAN STANDARD; PRT; 155 AA.

AC FGF2_HUMAN
 DT 01-NOV-1988 (Rel. 09, Created)
 DT 01-NOV-1988 (Rel. 09, Last sequence update)
 DT 15-NOV-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin).
 GN FGF2 OR FGFb.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OC NCBI_TaxID=9606;
 RP [1]
 RP MEDLINE-87053817; PubMed-3780670;
 RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Friedman J., Gospodarowicz D., Fiddes J.C.;
 RT "Human basic fibroblast growth factor: nucleotide sequence and genomic organization.";
 RL EMBO J. 5:2523-2528(1986).
 RP [2]
 RP SEQUENCE FROM N.A.
 RA MEDLINE-87217066; PubMed-3472745;
 RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.;
 RT "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells.";
 RL Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).
 RP [3]
 RP SEQUENCE FROM N.A.
 RA MEDLINE-87213238; PubMed-3579930;
 RA Sommer A., Brewer M.T., Thompson R.C., Moscattelli D., Presta M., Rifkin D.B.;
 RT "A form of human basic fibroblast growth factor with an extended amino terminus.";
 RL Biochem. Biophys. Res. Commun. 144:543-550(1987).
 RL [4]

RP SEQUENCE FROM N.A.
 RX MEDLINE-87162468; PubMed-2435575;
 RA Kurikawa T., Sasada R., Iwane M., Igarashi K.;
 RT "Cloning and expression of cDNA encoding human basic fibroblast growth factor.";
 RL FEBS Lett. 213:189-194(1987).
 RP [5]
 RP SEQUENCE FROM N.A.
 RX MEDLINE-89184522; PubMed-2538817;
 RA Preiss H., Kagnad M., Piras A.C., Klagsbrun M., Lelias J.M., Liauzon P., Chalou P., Tauber J.P., Amalric F., Smith J.A., Caput D.;
 RT "High molecular mass forms of basic fibroblast growth factor are initiated by alternative CUG codons.";
 RL Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989).
 RP [6]
 RP SEQUENCE OF 10-35.
 RX MEDLINE-86275260; PubMed-3732516;
 RA Gautschi P., Frater-Schroeder M., Boehlen P.;
 RT "Partial molecular characterization of endothelial cell mitogens from human brain: acidic and basic fibroblast growth factors.";
 RL FEBS Lett. 204:203-207(1986).
 RP [7]
 RP SEQUENCE OF 10-39.
 RX MEDLINE-86186784; PubMed-3964259;
 RA Gimenez-Gallo G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "Human brain-derived acidic and basic fibroblast growth factors: amino terminal sequences and specific mitogenic activities.";
 RL Biochem. Biophys. Res. Commun. 135:541-548(1986).
 RP [8]
 RP SEQUENCE OF 2-22.
 RX MEDLINE-87156686; PubMed-2435284;
 RA Story M.T., Esch F., Shimasaki S., Saase J., Jacobs S.C., Lawson R.K.;
 RT "Amino-terminal sequence of a large form of basic fibroblast growth factor isolated from human benign prostatic hyperplastic tissue.";
 RL Biochem. Biophys. Res. Commun. 142:702-709(1987).
 RP [9]
 RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
 RX MEDLINE-91195367; PubMed-1707542;
 RA Eriksson A.E., Cousens L.S., Weaver L.H., Matthews B.W.;
 RT "Three-dimensional structure of human basic fibroblast growth factor.";
 RL Proc. Natl. Acad. Sci. U.S.A. 88:3441-3445(1991).
 RP [10]
 RP X-RAY CRYSTALLOGRAPHY (1.6 ANGSTROMS).
 RX MEDLINE-94004464; PubMed-7691311;
 RA Eriksson A.E., Cousens L.S., Matthews B.W.;
 RT "Refinement of the structure of human basic fibroblast growth factor at 1.6-A resolution and analysis of presumed heparin binding sites by selenate substitution.";
 RL Protein Sci. 2:1274-1284(1993).
 RP [11]
 RP X-RAY CRYSTALLOGRAPHY (1.8 ANGSTROMS).
 RX MEDLINE-91195368; PubMed-1849658;
 RA Zhang J., Cousens L.S., Barr P.O., Sprang S.R.;
 RT "Three-dimensional structure of human basic fibroblast growth factor: a structural homolog of interleukin 1 beta.";
 RL Proc. Natl. Acad. Sci. U.S.A. 88:3446-3451(1991).
 RP [12]
 RP X-RAY CRYSTALLOGRAPHY (1.6 ANGSTROMS).
 RX MEDLINE-92121151; PubMed-1769963;
 RA Ago H., Kitegawa Y., Fujishima A., Matsuura Y., Katsube Y.;
 RT "Crystal structure of basic fibroblast growth factor at 1.6-A resolution.";
 RL J. Biochem. 110:360-363(1991).
 RP [13]
 RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
 RX MEDLINE-91095963; PubMed-1702556;
 RA Zhu X., Komiya H., Chirino A., Faham S., Fox G.M., Arakawa T.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth factors.";
 RL Science 251:90-93(1991).

[14]
 RN STRUCTURE BY NMR.
 RP MEDLINE-97040521; PubMed-8885834;
 RA Moy F.J., Seddon A.P., Boehlen P., Powers R.;
 RT "High-resolution solution structure of basic fibroblast growth factor
 RT determined by multidimensional heteronuclear magnetic resonance
 RT spectroscopy".
 RL Biochemistry 35:13552-13561(1996).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
 CC AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC or send an email to license@isb-sib.ch).
 CC -----
 DR EMBL: M17599; AA52534.1; ALT_INIT.
 DR EMBL: X04431; CA28027.1; -
 DR EMBL: X04432; CA28028.1; -
 DR EMBL: X04433; CA28029.1; -
 DR EMBL: M27968; AA52448.1; -
 DR EMBL: J04513; AA52533.1; ALT_INIT.
 DR PIR: A25824; A25824.
 DR PIR: A26642; A26642.
 DR PIR: B24243; B24243.
 DR PIR: B24301; B24301.
 DR PIR: B32878; B32878.
 DR PIR: S00297; S00297.
 DR PDB: 2FGF; 15-APR-92.
 DR PDB: 4FGF; 15-JUL-93.
 DR PDB: 1FGA; 15-JUL-93.
 DR PDB: 1BFB; 03-APR-96.
 DR PDB: 1BFC; 03-APR-96.
 DR PDB: 1BFF; 16-JUN-97.
 DR PDB: 1BFG; 31-JAN-94.
 DR PDB: 2BFG; 30-APR-94.
 DR PDB: 1BLA; 08-NOV-96.
 DR PDB: 1BLD; 08-NOV-96.
 DR Genew; HGNC:3676; FGF2.
 DR MIM: 134920; -
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF; 1.
 DR PRINTS: PRO0262; IL1HBGF.
 DR PRODOM: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF; 1; FGF.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 DR Growth factor; Mitogen; Angiogenesis; Heparin-binding;
 KW 3D-structure.
 KM PROPP 1 9
 FT CHAIN 10 155
 FT SITE 46 48
 FT SITE 88 90
 FT BINDING 27 31
 FT BINDING 116 119
 FT STRAND 30 34
 FT TURN 35 38
 FT STRAND 39 43
 FT TURN 45 46
 FT STRAND 49 52
 FT TURN 55 56
 FT HELIX 58 60
 FT STRAND 62 66
 FT TURN 69 70

HEPARIN-BINDING GROWTH FACTOR 2.
 CELL ATTACHMENT SITE (POTENTIAL).
 CELL ATTACHMENT SITE (POTENTIAL).
 HEPARIN (POTENTIAL).
 HEPARIN (POTENTIAL).

FT STRAND 71 76
 FT TURN 77 80
 FT STRAND 81 85
 FT TURN 87 88
 FT STRAND 91 94
 FT HELIX 99 101
 FT STRAND 103 107
 FT TURN 109 110
 FT STRAND 113 117
 FT TURN 121 122
 FT STRAND 124 124
 FT STRAND 127 127
 FT TURN 129 130
 FT STRAND 132 133
 FT HELIX 136 138
 FT TURN 141 142
 FT HELIX 144 146
 FT STRAND 148 152

Query Match 98.6%; Score 776; DB 1; Length 155;
 Best Local Similarity 98.6%; Pred. No. 6,6e-74;
 Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAPPGHFKDPKRLCKNGGFEFLRHPDGRVYDGRKSDPHTKLOAEER 60
 DB 10 PALPEDGSGAPPGHFKDPKRLCKNGGFEFLRHPDGRVYDGRKSDPHTKLOAEER 69
 QY 61 GVSISGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRKYSSWYALKR 120
 DB 70 GVSISGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRKYTSWYALKR 129
 QY 121 TGQYKLGPKTGPQKAILFLPMSAKS 146
 DB 130 TGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 4
 FGF2_RAT
 ID FGF2_RAT STANDARD; PRT; 154 AA.
 AC P13109;
 DT 01-JAN-1990 (Rel. 13, Created)
 DT 01-JAN-1990 (Rel. 13, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
 DE growth factor) (BFGF) (Prostatoplin).
 GN FGF2 OR FGF-2.
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=10116;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN-Sprague-Dawley; TISSUE-Ovary;
 RX MEDLINE-89061721; PubMed-3196337;
 RA Shimazaki S., Emoto N., Koba A., Mercado M., Shibata F.,
 RA Cooksey K., Baird A., Ling N.;
 RT "Complementary DNA cloning and sequencing of rat ovarian basic
 RT fibroblast growth factor and tissue distribution study of its mRNA";
 RL Biochem. Biophys. Res. Commun. 157:256-263(1988).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE-Brain;
 RX MEDLINE-88262516; PubMed-3387229;
 RA Kurokawa T., Seno M., Igataishi K.;
 RT "Nucleotide sequence of rat basic fibroblast growth factor cDNA";
 RL Nucleic Acids Res. 16:5201-5201(1988).
 RN [3]
 RP SEQUENCE OF 1-28 FROM N.A.
 RC STRAIN-Sprague-Dawley; TISSUE-Testis;
 RX MEDLINE-97200905; PubMed-9048734;
 RA Pasumathil K.B.S., Jin Y., Cattini P.A.;
 RT "Cloning of the rat fibroblast growth factor-2 promoter region and
 RT its response to mitogenic stimuli in glioma C6 cells.";

RL J. Neurochem. 68:898-908(1997).
RN [4]
RP SEQUENCE OF 35-154 FROM N.A.
RC STRAIN-Sprague-Dawley; TISSUE-Brain;
RX MEDLINE-9239546; Pubmed-13378302;
RA El-Husseini A.E.-D., Paterson J.A., Mwal Y., Shiu R.P.C.;
RT PCR detection of the rat brain basic fibroblast growth factor (brcf)
RT mRNA containing a unique 3' untranslated region.
RL Blochum. Biophys. Acta 1131:314-316(1992).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- TISSUE SPECIFICITY: FOUND IN ALL THE TISSUES EXAMINED.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC ARGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC -----
DR EMBL: M22427; AAA4210.1; -
DR EMBL: X07285; CAA30265.1; -
DR EMBL: U78079; AAC53225.1; -
DR EMBL: X61697; CAA43863.1; -
DR PIR: S00876; S00876.
DR PIR: A31674; A31674.
DR HSSP: P09038; 1BFF.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF, 1.
DR PRINTS: PR00262; IL1HBGF.
DR PRODOM: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF, 1.
DR PROSITE: PS00247; HBGF_FGF, 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 9
FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 26 30 HEPARIN (POTENTIAL).
FT BINDING 115 118 HEPARIN (POTENTIAL).
FT SEQUENCE 154 AA; 17139 MW; 1A0F1AF423BD403 CRC64;
SO
Query Match 96.5%; Score 759.5; DB 1; Length 154;
Best Local Similarity 97.3%; Pred. No. 3.5e-72;
Matches 142; Conservative 2; Mismatches 1; Indels 1; Gaps 1;
QY 1 PALPEDGGGAFPPGHFKPKRLKCKNGGFLLRIHPDGVADVGRKSDPHIKQLQAEER 60
DB 10 PALPEGGG-GAPPGGHFKPKRLKCKNGGFLLRIHPDGVADVGRKSDPHIKQLQAEER 68
QY 61 GVSISIKGVCANRYLAKMKEDGRLASCKVTECEFFERLESNNNTYRSKRYSYVAALKR 120
DB 69 GVSISIKGVCANRYLAKMKEDGRLASCKVTECEFFERLESNNNTYRSKRYSYVAALKR 128
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
DB 129 TGOYKLGSKTGPQKAILFLPMSAKS 154
RESULT 5
FGF2_MOUSE STANDARD; PRT; 154 AA.
AC P15655;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast

DE growth factor) (BFGF) (Prostatropin).
GN FGF2 OR FGF-2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_Taxid=10090;
QY [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-90201563; Pubmed-2318343;
RA Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.;
RT Isolation of cDNAs encoding four mouse FGF family members and
RT characterization of their expression patterns during embryogenesis.";
RL Dev. Biol. 138:454-463(1990).
CC [2]
CC SEQUENCE FROM N.A.
CC STRAIN-C57BL/6J, A/J, and NOD/LtJ; TISSUE-Spleen;
CC Ma R.Z., Teuscher C.;
CC Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC ARGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC -----
DR EMBL: M30644; AAA37621.1; -
DR EMBL: AF065903; AAC17503.1; -
DR EMBL: AF065904; AAC17504.1; -
DR EMBL: AF065905; AAC17505.1; -
DR PIR: C37360; C37360.
DR HSSP: P09038; 1BFF.
DR MGD: MGI:95516; Fgf2.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF, 1.
DR PRINTS: PR00262; IL1HBGF.
DR PRODOM: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF, 1.
DR PROSITE: PS00247; HBGF_FGF, 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 9
FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 26 30 HEPARIN (POTENTIAL).
FT BINDING 115 118 HEPARIN (POTENTIAL).
FT SEQUENCE 154 AA; 17153 MW; 689F677416274388 CRC64;
SO
Query Match 95.9%; Score 754.5; DB 1; Length 154;
Best Local Similarity 96.6%; Pred. No. 1.1e-71;
Matches 141; Conservative 3; Mismatches 1; Indels 1; Gaps 1;
QY 1 PALPEDGGGAFPPGHFKPKRLKCKNGGFLLRIHPDGVADVGRKSDPHIKQLQAEER 60
DB 10 PALPEOGGA-AFPDGHFKPKRLKCKNGGFLLRIHPDGVADVGRKSDPHIKQLQAEER 68
QY 61 GVSISIKGVCANRYLAKMKEDGRLASCKVTECEFFERLESNNNTYRSKRYSYVAALKR 120
DB 69 GVSISIKGVCANRYLAKMKEDGRLASCKVTECEFFERLESNNNTYRSKRYSYVAALKR 128
QY 121 TGOYKLGPKTGPQKAILFLPMSAKS 146
DB 129 TGOYKLGSKTGPQKAILFLPMSAKS 154

RESULT 6
FGF2_RABIT
ID FGF2_RABIT STANDARD; PRT; 137 AA.
AC P48798;
DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatoplin) (Fragment).
CN FGF2.
OS Oryctolagus cuniculus (Rabbit).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-New Zealand white; TISSUE-Smooth muscle;
RX MEDLINE-9343209; PubMed-8342599;
RA Winkles J.A., Friesel R., Alberts G.F., Janat M.F., Liu G.;
RT "Elevated expression of basic fibroblast growth factor in an immortalized rabbit smooth muscle cell line."
RL Am. J. Pathol. 143:518-527(1993).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC
CC EMBL: L12034; AAA31248.1; .
CC DR HSSP: P09038; 1BF.
CC DR InterPro: IPR002209; HB/F_growthfact.
CC DR Pfam: PF00167; FGF; 1.
CC DR ProDom: PD000831; HB/F_growthfact; 1.
CC DR SMART: SM00442; FGF; 1.
CC DR PROSITE: PS00247; HBGF_FGF; 1.
CC KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
CC FT BINDING 18 22
CC FT BINDING 107 110 HEPARIN (POTENTIAL).
CC FT NON_TER 137 137
CC SO SEQUENCE 137 AA; 15418 MW; 0D9E457B88E8C51 CRC64;
Query Match 93.5%; Score 736; DB 1; Length 137;
Best Local Similarity 99.3%; Pred. No. 8.5e-70;
Matches 136; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPDGSGAFPPGHHKDKRLKCKNGGFFLRHPDGRDGVREKSDPHIKLOLAER 60
DB 1 PALPDGSGAFPPGHHKDKRLKCKNGGFFLRHPDGRDGVREKSDPHIKLOLAER 60
QY 61 GVSISIKVCANRYLAMEDEGRILASKCVTDCFFEEFLSNNTYTSRKYSYYVALKR 120
DB 61 GVSISIKVCANRYLAMEDEGRILASKCVTDCFFEEFLSNNTYTSRKYSYYVALKR 120
QY 121 TGOYKLGPKTGPQKAI 137
DB 121 TGOYKLGPKTGPQKAI 137

RESULT 7
FGF2_CHICK
ID FGF2_CHICK STANDARD; PRT; 158 AA.
AC P48800;

DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).
CN FGF2 OR FGF-2.
OS Gallus gallus (Chicken).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.
OX NCBI_TaxID=9031;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-93246053; PubMed-7663281;
RA Boria A.Z., Zeller R., Meljers C.;
RT "Expression of alternatively spliced bFGF first coding exons and antisense mRNAs during chicken embryogenesis.";
RL Dev. Biol. 157:110-118(1993).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC
CC DR EMBL: M95707; AAA48617.1; .
CC DR HSSP: P09038; 1BF.
CC DR InterPro: IPR002209; HB/F_growthfact.
CC DR InterPro: IPR002348; IL1_HBGF.
CC DR Pfam: PF00167; FGF; 1.
CC DR PRINTS: PRO0262; IL1HBGF.
CC DR ProDom: PD000831; HB/F_growthfact; 1.
CC DR SMART: SM00442; FGF; 1.
CC DR PROSITE: PS00247; HBGF_FGF; 1.
CC KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
CC FT PROPEP 1 12
CC FT CHAIN 13 158
CC FT BINDING 30 34 HEPARIN (POTENTIAL).
CC FT BINDING 119 122 HEPARIN (POTENTIAL).
CC SO SEQUENCE 158 AA; 17374 MW; 7B69B684C1F1816 CRC64;
Query Match 93.3%; Score 734; DB 1; Length 158;
Best Local Similarity 93.2%; Pred. No. 1.6e-69;
Matches 136; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 1 PALPDGSGAFPPGHHKDKRLKCKNGGFFLRHPDGRDGVREKSDPHIKLOLAER 60
DB 13 PALPDGSGAFPPGHHKDKRLKCKNGGFFLRHPDGRDGVREKSDPHIKLOLAER 72
QY 61 GVSISIKVCANRYLAMEDEGRILASKCVTDCFFEEFLSNNTYTSRKYSYYVALKR 120
DB 73 GVSISIKVCANRYLAMEDEGRILASKCVTDCFFEEFLSNNTYTSRKYSYYVALKR 132
QY 121 TGOYKLGPKTGPQKAI 146
DB 133 TGOYKLGPKTGPQKAI 158

REF T 8
FGE MONDO
ID FGF2_MONDO STANDARD; PRT; 156 AA.
AC P48798;
DT 01-FEB-1996 (Rel. 33, Created)

DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prestatropin).
 GN FGF2.
 OS Monodelphis domestica (Short-tailed grey opossum).
 CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Metatheria; Didelphimorphia; Didelphidae; Monodelphis.
 CC NCBI_TaxID=13616;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=94296558; PubMed=8024698;
 RA Kusewitt D.F., Sabourin C.L.K., Sheburn T.E., Ley R.D.;
 RT "Characterization of cDNA encoding basic fibroblast growth factor of the marsupial Monodelphis domestica."
 RL DNA Cell Biol. 13:549-554(1994).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC
 CC EMBL: 215154; CAA78854.1; ALT_INIT.
 DR HSSP: P09038; LBRF.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; ILL_HBGF.
 DR Pfam: PF00167; FGF; 1.
 DR PRINTS: PR00262; ILLHBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF; 1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1
 FT CHAIN 10 156 HEPARIN-BINDING GROWTH FACTOR 2.
 FT BINDING 28 32 HEPARIN (POTENTIAL).
 FT BINDING 117 120 HEPARIN (POTENTIAL).
 FT BINDING 156 AA; 17303 MW; 76555FCG49BFI209 CRC64;
 SQ SEQUENCE 156 AA; 17303 MW; 76555FCG49BFI209 CRC64;
 Query Match 91.2%; Score 717.5; DB 1; Length 156;
 Best Local Similarity 92.5%; Pred. No. 8.4e-68;
 Matches 136; Conservative 4; Mismatches 6; Indels 1; Gaps 1;
 QY 1 PALPED-GSSGAPFPGHFDPKRLKCKNGGFFLRHPDGRVGVRSKSDPHIKQLQAAEE 59
 DB 10 PALSGGGGGGAPPGHFDPRKLYCKNGGFFLRHPDGVDSIRKSDENIKQLQAAEE 69
 QY 60 RGVASIKGVCANRYLAMKEDGRLLAKSCVYDECFEERLESNNYNTYRSKYSWYALK 119
 DB 70 RGVASIKGVCANRYLAMKEDGRLLAKKYTEBCEFFERLESNNYNTYRSKYSWYALK 129
 QY 120 RTGVYKLGKTPGQKAILFLPMSAKS 146
 DB 130 RTGVYKLGKTPGQKAILFLPMSAKS 156
 RESULT 9
 ID FGF2_XENLA STANDARD; PRT; 155 AA.
 AC P12226;
 DT 01-OCT-1989 (Rel. 12, Created)
 DT 01-JAN-1990 (Rel. 13, Last sequence update)

DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).
 GN FGF2 OR FGF-2.
 OS Xenopus laevis (African clawed frog).
 CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipidae; Pipidae;
 CC Xenopodinae; Xenopus.
 CC NCBI_TaxID=8355;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89058621; PubMed=3194757;
 RA Kimmel D., Abraham J., Haaparanta T., Palisi T., Kirschner M.;
 RT "The presence of fibroblast growth factor in the frog egg: its role as a natural mesoderm inducer."
 RL Science 242:1053-1056(1988).
 RN [2]
 RP SEQUENCE OF 95-155 FROM N.A.
 RX MEDLINE=88052890; PubMed=3479265;
 RA Kimmel D., Kirschner M.;
 RT "Synergistic induction of mesoderm by FGF and TGF-beta and the identification of an mRNA coding for FGF in the early Xenopus embryo."
 RL Cell 51:869-877(1987).
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC
 CC EMBL: M18067; AAA49726.1;
 DR PIR: A29618; A29618.
 DR PIR: A40117; A40117.
 DR HSSP: P09038; LBRF.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; ILL_HBGF.
 DR Pfam: PF00167; FGF; 1.
 DR PRINTS: PR00262; ILLHBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF; 1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1
 FT CHAIN 10 155 HEPARIN-BINDING GROWTH FACTOR 2.
 FT BINDING 27 31 HEPARIN (POTENTIAL).
 FT BINDING 116 119 HEPARIN (POTENTIAL).
 FT CONFLICT 111 111 MISSING (IN REF. 2).
 SQ SEQUENCE 155 AA; 17241 MW; 036735C8063142FD CRC64;
 Query Match 81.8%; Score 644; DB 1; Length 155;
 Best Local Similarity 82.9%; Pred. No. 3.8e-60;
 Matches 121; Conservative 8; Mismatches 17; Indels 0; Gaps 0;
 QY 1 PALPEDGSGAPPGHFDPRKLYCKNGGFFLRHPDGRVGVRSKSDPHIKQLQAAER 60
 DB 10 PRESEDEGNGNPFSPGSGFKPKRLKCKNGGFFLRHPDGRVGVRSKSDPHIKQLQAAER 69
 QY 61 GGVASIKGVCANRYLAMKEDGRLLAKSCVYDECFEERLESNNYNTYRSKYSWYALKR 120
 DB 70 GGVASIKGVCANRYLAMKEDGRLLAKSLKCTIDECFEERLEANNYNTYRSKYSWYALKR 129
 QY 121 TGQYKLGKTPGQKAILFLPMSAKS 146
 DB 130 TGQYKLGKTPGQKAILFLPMSAKS 155
 RESULT 10
 ID FGF1_MESAU STANDARD; PRT; 155 AA.
 ID FGF1_MESAU STANDARD; PRT; 155 AA.

AC P34004;
 DT 01-FEB-1994 (Rel. 28, Created)
 DT 01-FEB-1994 (Rel. 28, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF).
 GN FGF1 OR FGF-1.
 OS Mesocricetus auratus (Golden hamster).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae; Mesocricetus.
 CC NCBI_TaxID=10036;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=90270291; PubMed=1693366;
 RA Hall J.A., Harris M.A., Malark M., Mansson P.E., Zhou H., Harris S.E.;
 RT "Characterization of the hamster DDT-1 cell afGF/IGBF-I gene and cDNA and its modulation by steroids";
 RL J. Cell. Biochem. 43:17-26(1990).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY THAN DOES BFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC PIR: A60721; A60721.
 DR HSSP: P05230; 1RM.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF; 1.
 DR PRINTS: PR00262; IL1HBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF; 1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1 15
 FT CHAIN 16 155
 FT BINDING 24 28
 FT BINDING 113 116
 FT SEQUENCE 155 AA; 17403 MM; 41E5EC760E412CC5 CRC64;
 SQ
 Query Match 51.5%; Score 405; DB 1; Length 155;
 Best Local Similarity 57.4%; Pred. No. 3.1e-35;
 Matches 78; Conservative 17; Mismatches 39; Indels 2; Gaps 1;
 Oy 13 PGHKKDPKRLCKNGGFFLRHPDGRVGVREKSDPHIKILOAEERGVSIKGCANR 72
 Db 19 PPGNKKRRLKLYCSNGHRLRLPDGYDGTDRSDQHLQDLSAEGEVIKGTETGQ 78
 Oy 73 YLAKEDGRLASKVCVDECFERLESNNNTYRSRKS--SWYVALKRTQYKRGPT 130
 Db 79 YLAKDTGLYSGQPNNECLERLEENHYNTYTSKKAENKMWGLKKNCSCKRGPT 138
 Oy 131 GPGOKALIFLPMASKS 146
 Db 139 HYGOKALIFLPLPVSS 154
 RESULT 11
 FGF1_HUMAN
 ID FGF1_HUMAN STANDARD: PRT: 155 AA.
 AC P05230; P07502;
 DT 13-AUG-1987 (Rel. 05, Created)
 DT 13-AUG-1987 (Rel. 05, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Beta-endothelial cell growth factor) (ECGF-beta).
 GN FGF1 OR FGF-1.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 CC NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=86261805; PubMed=3523756;
 RA Jaye M., Howk R., Burgess W., Ricca G.A., Chiu I.-M., Ravera M.W., O'Brien S.J., Modi W.S., Maciag T., Dohan W.N.;
 RT "Human endothelial cell growth factor: cloning, nucleotide sequence, and chromosome localization";
 RL Science 233:541-545(1986).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Brain stem;
 RX MEDLINE=89343957; PubMed=2474753;
 RA Wang W.P., Lehtoma K., Varban M.L., Krishnan I., Chiu I.M.;
 RT "Cloning of the gene coding for human class 1 heparin-binding growth factor and its expression in fetal tissues";
 RL Mol. Cell. Biol. 9:2387-2395(1989).
 RN [3]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Brain stem;
 RX MEDLINE=90265618; PubMed=1693186;
 RA Chiu I.M., Wang W.P., Lehtoma K.;
 RT "Alternative splicing generates two forms of mRNA coding for human heparin-binding growth factor 1.";
 RL Oncogene 5:755-762(1990).
 RN [4]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=90073637; PubMed=2590193;
 RA Meglia A., Tischer E., Graves D., Tunolo A., Miller J.,
 RT "Structural analysis of the gene for human acidic fibroblast growth factor";
 RL Biochem. Biophys. Res. Commun. 164:1121-1129(1989).
 RN [5]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92019819; PubMed=1717925;
 RA Wang W.P., Quick D., Balcerzak S.P., Needleman S.W., Chiu I.M.;
 RT "Cloning and sequence analysis of the human acidic fibroblast growth factor gene and its preservation in leukemia patients";
 RL Oncogene 6:1521-1529(1991).
 RN [6]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92202857; PubMed=1372643;
 RA Li Y.L., Kha H., Golden J.A., Michelielsen A.A.J., Goetzl E.J.,
 RT "An acidic fibroblast growth factor protein generated by alternate splicing acts like an antagonist";
 RL J. Exp. Med. 175:1073-1080(1992).
 RN [7]
 RP SEQUENCE OF 1-154 FROM N.A.
 RX MEDLINE=94069734; PubMed=7504343;
 RA Zhao X.M., Yeoh T.K., Hiebert M., First W.H., Miller G.G.;
 RT "The expression of acidic fibroblast growth factor (heparin-binding growth factor-1) and cytokine genes in human cardiac allografts and T cells";
 RL Transplantation 56:1177-1182(1993).
 RN [8]
 RP SEQUENCE OF 1-40 FROM N.A.
 RX MEDLINE=90365758; PubMed=2393407;
 RA Crumley G., Dionne C.A., Jaye M.;
 RT "The gene for human acidic fibroblast growth factor encodes two upstream exons alternatively spliced to the first coding exon";
 RL Biochem. Biophys. Res. Commun. 171:7-13(1990).
 RN [9]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86296647; PubMed=2427112;
 RA Harper J.W., Strydom D.J., Lobb R.R.;
 RT "Human class 1 heparin-binding growth factor: structure and homology to bovine acidic brain fibroblast growth factor";
 RL J. Biochemistry 25:4097-4103(1986).
 RN [10]
 RP SEQUENCE OF 16-155.

RX MEDLINE-86295741; PubMed-3527167;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "The complete amino acid sequence of human brain-derived acidic
 fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 138:611-617(1986).
 [11]
 RN SEQUENCE OF 16-155.
 RX MEDLINE-87048871; PubMed-3778488;
 RA Gautschi-Sova P., Mueller T., Boehlen P.;
 RT "Amino acid sequence of human acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 140:874-880(1986).
 [12]
 RN SEQUENCE OF 16-47.
 RX MEDLINE-86186784; PubMed-3964259;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "Human brain-derived acidic and basic fibroblast growth factors:
 amino terminal sequences and specific mitogenic activities.";
 RL Biochem. Biophys. Res. Commun. 135:541-548(1986).
 [13]
 RN SEQUENCE OF 16-49.
 RX MEDLINE-86275260; PubMed-3732516;
 RA Gautschi P., Frater-Schoeder M., Boehlen P.;
 RT "Partial molecular characterization of endothelial cell mitogens from
 human brain: acidic and basic fibroblast growth factors.";
 RL FEBS Lett. 204:203-207(1986).
 [14]
 RN X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).
 RX MEDLINE-96194129; PubMed-8652550;
 RA Blaher M., Disalvo J., Thomas K.A.;
 RT "X-ray crystal structure of human acidic fibroblast growth factor.";
 RL Biochemistry 35:2086-2094(1996).
 [15]
 RN STRUCTURE BY NMR OF 24-155.
 RX MEDLINE-94358885; PubMed-7521397;
 RA Pineda-Lucena A., Jimenez M.A., Nieto J.L., Santoro J., Rico M.,
 Gimenez-Gallego G.;
 RT "1H-NMR assignment and solution structure of human acidic fibroblast
 growth factor activated by inositol hexasulfate.";
 RL J. Mol. Biol. 242:81-98(1994).
 [16]
 RN STRUCTURE BY NMR OF 24-155.
 RX MEDLINE-97107535; PubMed-8950275;
 RA Pineda-Lucena A., Jimenez M.A., Lozano R.M., Nieto J.L., Santoro J.,
 Rico M., Gimenez-Gallego G.;
 RT "Three-dimensional structure of acidic fibroblast growth factor in
 solution: effects of binding to a heparin functional analog.";
 RL J. Mol. Biol. 264:162-178(1996).
 [17]
 RN STRUCTURE BY NMR OF 25-155.
 RX MEDLINE-98387896; PubMed-9719643;
 RA Lozano R.M., Jimenez M., Santoro J., Rico M., Gimenez-Gallego G.;
 RT "Solution structure of acidic fibroblast growth factor bound to 1,3,
 6-naphthalenesulfonate: a minimal model for the anti-tumoral
 action of suramin and suradistas.";
 RL J. Mol. Biol. 281:899-915(1998).
 -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CONCENTRATION OF THESE 2 GROWTH FACTORS.
 -1- SUBUNIT: MONOMER.
 -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
 THAN DOES BFGF.
 -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 or send an email to license@isb-sib.ch).
 CC EMBL, M13361; AAA79245.1; .

DR EMBL: X51943; CAA36206.1; .
 DR EMBL: M30492; AAA52446.1; .
 DR EMBL: M30490; AAA52446.1; JOINED.
 DR EMBL: M30491; AAA52446.1; JOINED.
 DR EMBL: M60515; AAA51672.1; .
 DR EMBL: M60516; AAA51673.1; .
 DR EMBL: M23087; AAA52638.1; .
 DR EMBL: M23086; AAA52638.1; JOINED.
 DR EMBL: S67291; AAB29057.2; .
 DR EMBL: X65778; CAA46661.1; .
 DR PIR: A23553; A23553.
 DR PIR: A24243; A24243.
 DR PIR: A24301; A24301.
 DR PIR: A24662; A24662.
 DR PIR: A24820; A24820.
 DR PIR: A26386; A26386.
 DR PIR: A33665; A33665.
 DR PIR: S18217; S18217.
 DR PDB: 2AFC; 15-OCT-95.
 DR PDB: 1AXM; 22-APR-98.
 DR PDB: 2AXM; 22-APR-98.
 DR PDB: 1RML; 11-NOV-98.
 DR Genew: HGNC:3665; FGFL1.
 DR MIM: 131220; .
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.
 DR PRINTS: PR00262; IL1HBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF_1.
 DR PROSITE: PS00247; HBGF_FGF_1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding; Acetylation;
 KW 3D-structure.
 FT PROPEP 1 15
 FT CHAIN 16 155 HEPARIN-BINDING GROWTH FACTOR 1.
 FT MOD_RES 2 2 ACETYLATION.
 FT BINDING 24 28 HEPARIN (POTENTIAL).
 FT BINDING 113 116 HEPARIN (POTENTIAL).
 SQ SEQUENCE 155 AA; 17460 MW; F586E8BF09F180 CRC64;
 Query Match 50.2%; Score 395; DB 1; Length 155;
 Best local similarity 56.6%; Pred. No. 3,5e-34;
 Matches 77; Conservative 17; Mismatches 40; Indels 2; Gaps 1;
 QY 13 PGHFDPKRLKYNKGFFLRHPDGRVYDVRKSDPHIKLQDAEGRVYSIKGCANR 72
 DB 19 PPGVKKPKRLKYNKGFFLRHPDGRVYDVRKSDPHIKLQDAEGRVYSIKGCANR 78
 QY 73 YLAKEDGRLLAKSCVDEFFERLESNNYNTYRSKYS--SWYVALKRTGQYKIGPKT 130
 DB 79 YLAKEDGRLLAKSCVDEFFERLESNNYNTYRSKYS--SWYVALKRTGQYKIGPKT 138
 QY 131 GPGOKALFLPMSAKS 146
 DB 139 HYCKAKLFLPLPYSS 154
 RESULT 12
 FGFL_CHICK STANDARD; PRT; 155 AA.
 AC P19596;
 DT 01-FEB-1991 (Rel. 17, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast
 growth factor) (AFGF) (Alpha-endothelial cell growth factor).
 GN FGFL OR FGF-1.
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Actinoptera; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
 OC Gallus.
 OC NCBI_TaxID=9031.
 RN [1]

```

* SEQUENCE FROM N.A.
RX MEDLINE-91347925; PubMed-1715259;
RA Schurch H., Rissau W.;
RT "Differentiating and mature neurons express the acidic fibroblast
RT growth factor gene during chick neural development.";
RL Development 111:1143-1154(1991).
RN
RN SEQUENCE FROM N.A.
RA Martin G.R., Han J.K.;
RL Submitted (JUL-1995) to the EMBL/Genbank/DBJ databases.
RN
RN [3]
RP SEQUENCE OF 22-48.
RX MEDLINE-88296438; PubMed-3402441;
RA Rissau W., Gautschi-Sova P., Boehlen P.;
RT "Endothelial cell growth factors in embryonic and adult chick brain
RT are related to human acidic fibroblast growth factor.";
RL EMBJ 7:959-963(1988).
CC
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC
CC -1- SUBUNIT: MONOMER.
CC
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
CC THAN DOES BFGF.
CC
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC
CC DR EMBL: S63263; AAB19629.1; -
CC DR EMBL: U31863; AAA80310.1; -
CC DR EMBL: S63261; AAD13942.1; -
CC DR PIR: S02639; S02639;
CC DR HSSP: P05230; 2AMM.
CC DR InterPro: IPR002209; HB/F-growthfact.
CC DR InterPro: IPR002348; IL1_HBGF.
CC DR Pfam: PF00167; FGF; 1.
CC DR PRINTS: PR00262; IL1HBGF.
CC DR PRODom: PD000831; HB/F-growthfact; 1.
CC DR SMART: SM00442; FGF; 1.
CC DR PROSITE: PS00247; HBGF_FGF; 1.
CC KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
CC FT PROPEP 1 15
CC FT CHAIN 16 155 HEPARIN-BINDING GROWTH FACTOR 1.
CC FT CHAIN 22 155 ENDOTHELIAL CELL GROWTH FACTOR ALPHA.
CC FT BINDING 24 28 HEPARIN (POTENTIAL).
CC FT BINDING 113 116 HEPARIN (POTENTIAL).
CC SQ SEQUENCE 155 AA; 17322 MW; 8EDB70545E2B4365 CR664;
Query Match 49.9%; Score 392.5; DB 1; Length 155;
Best Local Similarity 55.2%; Pred. No. 6.3e-34;
Matches 79; Conservative 21; Mismatches 38; Indels 5; Gaps 2;
OY 2 ALPEDGSAFPFGHFKDKRLCKNGGFLRIHPDGRVGVKESDPHIKIQLOLEENG 61
DB 11 ALTERG---LPNGTKKKRLKLYCSNGHFLRLIPGKVDGTRDSQDHIQLOLSAEDVG 67
OY 62 VVSINKCANRYRLAMKEDRLASKCVTDECFEERLESNNYTSRKYS--SWYALK 119
DB 68 EYVTKSTAGQYLAQMTNGILYGSQLPGECLERLEENHYNTYISKHADNMWVGXK 127
OY 120 RIGQYLAGRTGPGKAILFLPM 142
DB 128 KNNSKILGPRTHYGKAILFLPL 150

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RESULT 13
FGL_MOUSE

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ID FGL_MOUSE STANDARD: PRT; 155 AA.
AC P10935;
DT 01-JUL-1989 (Rel. 11, Created)
DT 01-JUL-1989 (Rel. 11, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast
DE growth factor) (AFGF).
GN FGF1 OR FGF-1 OR FGFA.
OS Mus musculus (Mouse), and
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090, 10116;
RN
RN [1]
RP SEQUENCE FROM N.A.
RC SPECIES-Rat;
RX MEDLINE-89240051; PubMed-2470029;
RA Goodrich S., Yan G.C., Bahrendorf K., Mansson P.E.;
RT "The nucleotide sequence of rat heparin binding growth factor 1
RT (HBGF-1).";
RL Nucleic Acids Res. 17:2867-2867(1989).
RN
RN [2]
RP SEQUENCE FROM N.A.
RC SPECIES-Mouse;
RX MEDLINE-90201563; PubMed-2318343;
RA Hebert J.M., Basillio C., Goldfarb M., Haub O., Martin G.R.;
RT "Isolation of cDNAs encoding four mouse FGF family members and
RT characterization of their expression patterns during embryogenesis.";
RL Dev. Biol. 138:454-463(1990).
RN
RN [3]
RP SEQUENCE FROM N.A.
RC SPECIES-Mouse;
RX MEDLINE-97128312; PubMed-8972905;
RA Madral F., Hackshaw K.V., Chiu I.M.;
RT "Cloning and characterization of the mouse Fgf-1 gene.";
RL Gene 179:231-236(1996).
RN
RN [4]
RP SEQUENCE FROM N.A.
RC SPECIES-Mouse; STRAIN-BALB/C;
RX MEDLINE-97094746; PubMed-8939980;
RA Alam K.Y., Frosthalm A., Hackshaw K.V., Evans J.E., Rotter A.,
RA Chiu I.M.;
RT "Characterization of the 1B promoter of fibroblast growth factor 1
RT and its expression in the adult and developing mouse brain.";
RL J. Biol. Chem. 271:30263-30271(1996).
CC
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC
CC -1- SUBUNIT: MONOMER.
CC
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC
CC EMBL: X14232; CAA32448.1; -
CC DR EMBL: M30641; AAA37618.1; -
CC DR EMBL: U36459; AAC32969.1; -
CC DR EMBL: U36457; AAC32969.1; JOINED.
CC DR EMBL: U36458; AAC32969.1; JOINED.
CC DR EMBL: U67610; AAC32907.1; -
CC DR PIR: S04147; S04147.
CC DR PIR: D37360; D37360.
CC DR TSSP: P05230; 1RMU.
CC DR GDI: MG195515; Fgf1.
CC DR InterPro: IPR002209; HB/F-growthfact.
CC DR InterPro: IPR002348; IL1_HBGF.
CC DR Pfam: PF00167; FGF; 1.

```

DR PRINTS: PR00262; ILHBGF.
 DR Produm: PD000831; HB/F-growthfact: 1.
 DR SMART: SM00442; FGF: 1.
 DR PROSITE: PS00247; HBGF_FGF: 1.
 DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1 15
 FT CHAIN 16 155
 FT BINDING 24 28
 FT BINDING 113 116
 FT SEQUENCE 155 AA; 17418 MW; 8880E4FF0FBA4161 CRC64;
 SQ
 Query Match 49.7%; Score 391; DB 1; Length 155;
 Best Local Similarity 55.9%; Pred. No. 9.1e-34;
 Matches 76; Conservative 18; Mismatches 40; Indels 2; Gaps 1;
 QY 13 PPGHFKDKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKILOAEERGVSIKGVCANR 72
 DB 19 PLGNVKKPKLLYCSNGHFLRIIPDGTVDGTRDSQDHOIQLSASGEVYIKGTETGQ 78
 QY 73 YLAKMEDGRLASKCVTDECFEERLESNNNTYRSRKS--SWYVALKRTGQYKLGPT 130
 DB 79 YLAMDTEGLLYGSQTPNECEFLERLENNHNTYTSKHAENWFGVLKKNKSGCRKGPRT 138
 QY 131 GPGOKAILFLPMSAKS 146
 DB 139 HYGOKAILFLPVSS 154
 RESULT 14
 FGFL_PIG STANDARD: PRT: 152 AA.
 AC P20002;
 DT 01-FEB-1991 (Rel. 17, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor) (Fragment).
 GN FGF1 OR FGF-1.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_TaxID=9823;
 RN [1]
 RC SEQUENCE FROM N.A.
 RC TISSUE=Heart;
 RX MEDLINE=92062117; PubMed=1719973;
 RA Schmidt M., Sharma H.S., Schott R.J., Schaper W.;
 RT "Amplification and sequencing of mRNA encoding acidic fibroblast growth factor (afgf) from porcine heart.";
 RL Biochem. Biophys. Res. Commun. 180:853-859(1991).
 RN [2]
 RP SEQUENCE OF 22-41.
 RX MEDLINE=89231704; PubMed=2714282;
 RA Oulhaker W., Maasberg M., Bernotat-Danielowski S., Lueche N.,
 RT Sharma H.S., Schaper W.;
 RT "Isolation of heparin-binding growth factors from bovine, porcine and canine hearts.";
 RL Eur. J. Biochem. 181:67-73(1989).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY THAN DOES BFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC -----
 CC EMBL: X60317; CAA42869.1; -.
 DR DR PIR: S03954; S03954.
 DR HSSP: P05230; 2AXM.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR Pfam: PF00167; FGF: 1.
 DR Produm: PD000831; HB/F-growthfact: 1.
 DR SMART: SM00442; FGF: 1.
 DR PROSITE: PS00247; HBGF_FGF: 1.
 DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1 15
 FT CHAIN 16 >152
 FT BINDING 22 >152
 FT BINDING 24 28
 FT BINDING 113 116
 FT CONFLICT 31 31
 FT CONFLICT 39 39
 FT NON_TER 152 152
 FT SEQUENCE 152 AA; 17103 MW; AE853B0A92F9ABF4 CRC64;
 SQ
 Query Match 49.4%; Score 389; DB 1; Length 152;
 Best Local Similarity 56.8%; Pred. No. 1.4e-33;
 Matches 75; Conservative 18; Mismatches 37; Indels 2; Gaps 1;
 QY 13 PPGHFKDKRLCYCKNGGFLRIHPDGRVDGVREKSDPHIKILOAEERGVSIKGVCANR 72
 DB 19 PLGNVKKPKLLYCSNGHFLRIIPDGTVDGTRDSQDHOIQLSASGEVYIKGTETGQ 78
 QY 73 YLAKMEDGRLASKCVTDECFEERLESNNNTYRSRKS--SWYVALKRTGQYKLGPT 130
 DB 79 YLAMDTEGLLYGSQTPNECEFLERLENNHNTYTSKHAENWFGVLKKNKSGCRKGPRT 138
 QY 131 GPGOKAILFLPMSAKS 142
 DB 139 HYGOKAILFLPL 150
 RESULT 15
 FGFL_BOVIN STANDARD: PRT: 155 AA.
 AC P03968;
 DT 23-OCT-1986 (Rel. 02, Created)
 DT 01-MAR-1989 (Rel. 10, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Prostateprolin) (Endothelial cell growth factor beta and alpha chains) (Acidic eye-derived growth factor II) (EDGF II).
 GN FGF1 OR FGF-1 OR FGFA OR HBGF-1 OR AFGF.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RC SEQUENCE FROM N.A.
 RC TISSUE=Retina;
 RX MEDLINE=89083506; PubMed=3205724;
 RA Halley C., Courtois Y., Laurent M.;
 RT "Nucleotide sequence of bovine acidic fibroblast growth factor cDNA.";
 RL Nucleic Acids Res. 16:10913-10913(1988).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Retina;
 RX MEDLINE=89078619; PubMed=2849564;
 RA Alterio J., Halley C., Brou C., Soussi T., Courtois Y., Laurent M.;
 RT "Characterization of a bovine acidic FGF cDNA clone and its expression in brain and retina.";
 RL FEBS Lett. 242:71-46(1988).
 RN [3]
 RP SEQUENCE OF 2-155.

RA MEDLINE-87016918; PubMed-3532107;
 RA Burgess W.H., Mehlan T., Marshak D.R., Fraser B.A., Maciag T.;
 RT "Structural evidence that endothelial cell growth factor beta is the
 RT precursor of both endothelial cell growth factor alpha and acidic
 RT fibroblast growth factor.";
 RT Proc. Natl. Acad. Sci. U.S.A. 83:7216-7220(1986).
 RN [4]
 RP SEQUENCE OF 2-155.
 RX MEDLINE-87026586; PubMed-3768327;
 RA Ciriab J.W., Armes L.G., Carr S.A., Johnson C.M., Roberts G.D.,
 RA Bodoi J.R.S., McKeenhan W.L.;
 RT "Complete primary structure of prostatiopl, a prostate epithelial
 RT cell growth factor.";
 RT Biochemistry 25:4988-4993(1986).
 RN [5]
 RP SEQUENCE OF 16-155.
 RX MEDLINE-86070224; PubMed-4071057;
 RA Gimenez-Gallego G., Rodkey J., Bennett C., Rios-Candelore M.,
 RA Disalvo J., Thomas K.;
 RT "Brain-derived acidic fibroblast growth factor: complete amino acid
 RT sequence and homologues.";
 RT Science 230:1385-1388(1985).
 RN [6]
 RP SEQUENCE OF 16-44, AND COMPOSITION.
 RX MEDLINE-86055750; PubMed-4065099;
 RA Boehlen P., Esch F., Baird A., Gospodarowicz D.;
 RT "Acidic fibroblast growth factor (FGF) from bovine brain:
 RT amino-terminal sequence and comparison with basic FGF.";
 RT EMBO J. 4:1951-1956(1985).
 RN [7]
 RP SEQUENCE OF 16-56 FROM N.A.
 RX MEDLINE-86261806; PubMed-2425435;
 RA Abraham J.A., Mergis A., Whang J.L., Tumolo A., Friedman J.,
 RA Hjerlild K.A., Gospodarowicz D., Fildes J.C.;
 RT "Nucleotide sequence of a bovine clone encoding the angiogenic
 RT protein, basic fibroblast growth factor.";
 RT Science 233:545-548(1986).
 RN [8]
 RP SEQUENCE OF 16-45.
 RX MEDLINE-89231704; PubMed-2714282;
 RA Quinkler W., Maasberg M., Bernotat-Danielowski S., Luethe N.,
 RA Sharma H.S., Schaper W.;
 RT "Isolation of heparin-binding growth factors from bovine, porcine and
 RT canine hearts.";
 RT Eur. J. Biochem. 181:67-73(1989).
 RN [9]
 RP SEQUENCE OF 1-18 FROM N.A.
 RA Philippe J.M., Renaud F., Desset S., Laurent M.;
 RL Submitted (JUL-1992) to the EMBL/GenBank/DBJ databases.
 RN [10]
 RP X-RAY CRYSTALOGRAPHY (3.0 ANGSTROMS).
 RX MEDLINE-91095983; PubMed-1702556;
 RA Zhu X., Komiyama H., Chirino A., Faham S., Fox G.M., Arakawa T.,
 RA Hsu B.T., Rees D.C.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth
 RT factors.";
 RT Science 251:90-93(1991).
 RL Science 251:90-93(1991).
 CC -I- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -I- SUBUNIT: MONOMER.
 CC -I- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
 CC THAN DOES BFGF.
 CC -I- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC -----
 DR EMBL: M13439; AAA30516.1; -
 DR EMBL: X13221; CAA31610.1; -
 DR EMBL: X14032; CAA32192.1; -
 DR EMBL: M35608; AAA30517.1; -
 DR EMBL: X66446; CAA47063.1; -
 DR EMBL: M97660; AAA30563.1; -
 DR EMBL: M97661; AAA30564.1; -
 DR PIR: A01385; GRBOA.
 DR PIR: A25043; A25043.
 DR PIR: B25043; B25043.
 DR PIR: C25043; C25043.
 DR PIR: A24477; A24477.
 DR PIR: B24663; B24663.
 DR PIR: S02102; S02102.
 DR PDB: 1BAR; 31-OCT-93.
 DR PDB: 1AFC; 31-OCT-93.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF; 1.
 DR PRINTS: PR00262; IL1HBGF.
 DR PRODOM: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF; 1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding; Acetylation;
 KW 3D-structure.
 FT PROPEP 1 15
 FT CHAIN 2 155
 FT CHAIN 16 155
 FT CHAIN 22 155
 FT MOD_RES 2 2
 FT BINDING 24 28
 FT BINDING 113 116
 FT STRAND 27 31
 FT TURN 32 34
 FT STRAND 37 40
 FT TURN 42 43
 FT STRAND 46 49
 FT STRAND 55 57
 FT HELIX 59 61
 FT STRAND 69 69
 FT STRAND 71 73
 FT STRAND 79 82
 FT TURN 84 85
 FT STRAND 87 91
 FT HELIX 96 98
 FT STRAND 100 100
 FT STRAND 103 104
 FT TURN 106 107
 FT STRAND 110 111
 FT STRAND 113 114
 FT TURN 116 121
 FT STRAND 123 123
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 FT STRAND 132 132
 FT STRAND 134 134
 FT HELIX 135 137
 FT TURN 140 141
 FT TURN 144 145
 FT STRAND 147 150
 SO SEQUENCE 155 AA; 17493 MW; F636641F189F99BFD CMC64;
 Query Match 48.88; Score 384; DB 1; length 155;
 Best local similarity 55.18; Pred. No. 4.9e-33;
 Matches 75; Conservative 20; Mismatches 39; Indels 2; Gaps 1;
 Oy 13 PPGHKKDKRKYCKNNGFFLHPGGRVDGYREKSDPIKIQLOAEEGVYSIKVCANR 72
 Db 19 PLGNKKRKLKCSNGGFLRILPDGTVDTKDRSDHIQLOCAESIGEVYINSTETGQ 78
 Oy 73 YLAKMEDRLASCVTECECFERLESNNYTSRKYSS--WYVALKRTGQYKLGPKT 130
 :||| ||| | : :||| ||| | :||| ||| | :||| ||| | :||| ||| |

Wed Dec 4 15:10:38 2002

us-09-886-856-2.rsp

Page 13

Db 79 FLAMDTDLGSGOTPNNECLFLERLEENHYNTYISKHAEKHPVGLKNGRSKLGSPRT 138
QY 131 GPGOKAILFLPMSAKS 146
|||||:|
Db 139 HFGOKAILFLPLPVSS 154

Search completed: December 4, 2002, 11:10:00
Job time : 9.5 secs

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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:09:18 ; Search time 26.5 Seconds
(without alignments)
1135.203 Million cell updates/sec

Title: US-09-886-856-2

Perfect score: 787
Sequence: 1 PALPDDGGSGAFPPGHFKDP.....GPKTGPQKALFLPMKSKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 671580 segs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

SPTREMBL_21:*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_virus:*
16: sp_bacteriap:*
17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-------------|
| 1 | 776 | 98.6 | 196 | 4 | P78443 |
| 2 | 739 | 93.9 | 153 | 11 | O925A3 |
| 3 | 699 | 88.8 | 170 | 11 | O60487 |
| 4 | 693 | 88.1 | 130 | 6 | O77767 |
| 5 | 665 | 84.5 | 155 | 13 | O90Y92 |
| 6 | 588 | 74.7 | 155 | 13 | O80FR9 |
| 7 | 576 | 73.2 | 111 | 6 | O9BDX1 |
| 8 | 572 | 72.7 | 108 | 6 | O9N1S7 |
| 9 | 565 | 71.8 | 125 | 13 | O98TD8 |
| 10 | 488 | 62.0 | 109 | 11 | O925A1 |
| 11 | 484 | 61.5 | 112 | 11 | O925A2 |
| 12 | 479.5 | 60.9 | 146 | 13 | O07659 |
| 13 | 479 | 60.9 | 101 | 13 | P79706 |
| 14 | 460 | 58.4 | 87 | 6 | O8RMP4 |
| 15 | 342 | 43.5 | 76 | 6 | O9NOV2 |
| 16 | 300 | 38.1 | 106 | 6 | O9N1S8 |

| | | | | | | |
|----|-------|------|-----|----|--------|---------------------|
| 17 | 287 | 36.5 | 114 | 4 | O16443 | O16443 homo sapien |
| 18 | 287 | 36.5 | 114 | 4 | O00527 | O00527 homo sapien |
| 19 | 246 | 31.3 | 196 | 13 | O9YH31 | O9YH31 notophthalm |
| 20 | 246 | 31.3 | 208 | 11 | O8R5L5 | O8R5L5 rattus norv |
| 21 | 242 | 30.7 | 124 | 13 | O90X05 | O90X05 ambystoma m |
| 22 | 237 | 30.1 | 245 | 11 | O8R5L9 | O8R5L9 rattus norv |
| 23 | 228 | 29.0 | 206 | 13 | O9YGD8 | O9YGD8 oncorhynch |
| 24 | 227 | 28.8 | 195 | 11 | O8R5L6 | O8R5L6 rattus norv |
| 25 | 221 | 28.1 | 111 | 13 | O90X01 | O90X01 ambystoma m |
| 26 | 216.5 | 27.5 | 201 | 13 | O80G59 | O80G59 ambystoma m |
| 27 | 214 | 27.2 | 208 | 6 | O95L12 | O95L12 sus scrofa |
| 28 | 210 | 26.7 | 191 | 13 | O9DFC9 | O9DFC9 brachydanio |
| 29 | 207 | 26.3 | 208 | 13 | O9PYV1 | O9PYV1 xenopus lae |
| 30 | 207 | 26.3 | 212 | 11 | O9ESL9 | O9ESL9 mus musculu |
| 31 | 205.5 | 26.1 | 207 | 11 | O9ESL8 | O9ESL8 mus musculu |
| 32 | 205.5 | 26.1 | 208 | 11 | O9ERK5 | O9ERK5 mus musculu |
| 33 | 203 | 25.8 | 208 | 6 | O9SK97 | O9SK97 macaca fasc |
| 34 | 203 | 25.8 | 212 | 11 | O9ESY9 | O9ESY9 rattus norv |
| 35 | 202.5 | 25.7 | 212 | 13 | O42407 | O42407 gallus gall |
| 36 | 198.5 | 25.2 | 301 | 5 | O8R8A3 | O8R8A3 clona savig |
| 37 | 195.5 | 24.8 | 134 | 13 | O90X03 | O90X03 ambystoma m |
| 38 | 193.5 | 24.6 | 213 | 6 | O9N1B9 | O9N1B9 ovis aries |
| 39 | 193 | 24.5 | 208 | 4 | O96P59 | O96P59 homo sapien |
| 40 | 191 | 24.3 | 62 | 6 | O8SP12 | O8SP12 equus caball |
| 41 | 191 | 24.3 | 162 | 11 | O8V179 | O8V179 rattus norv |
| 42 | 188 | 23.9 | 112 | 13 | O90XP9 | O90XP9 ambystoma m |
| 43 | 187 | 23.8 | 153 | 6 | O8S073 | O8S073 canis famill |
| 44 | 186.5 | 23.7 | 186 | 6 | O95L47 | O95L47 mustela vis |
| 45 | 186.5 | 23.7 | 237 | 13 | O91A16 | O91A16 gallus gall |

ALIGNMENTS

RESULT 1
P78443 PRELIMINARY: PRT: 196 AA.
AC P78443;
DT 01-MAY-1997 (TREMBLrel. 03, Created)
DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE 21 kDa basic fibroblast growth factor (BFGF).
GN BFGF.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89184522; PubMed=2538817;
RA Prats H., Kaghed M., Prats A.C., Klagsbrun M., Lellis J.M.,
RA Liauzun P., Chalou P., Tauber J.P., Analitic F., Smith J.A., Caput D.;
RT "High molecular mass forms of basic fibroblast growth factor are
RT initiated by alternative CUG codons";
RL Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989).
RN [2]
RP SEQUENCE OF 81-168 FROM N.A.
RX MEDLINE=93038590; PubMed=1417798;
RA Watson R., Anthony F., Pickett M., Lambden P., Masson G.M.,
RA Thomas E.J.;
RT "Reverse transcription with nested polymerase chain reaction shows
RT expression of basic fibroblast growth factor transcripts in human
RT granulosa and cumulus cells from in vitro fertilisation patients";
RL Biochem. Biophys. Res. Commun. 187:1227-1231(1992).
DR EMBL: J04513; AAA52532.1; -
DR EMBL: S47380; AAD13853.1; -
DR HSSP: P09038; 1BFF.
DR Interpro: IPR002209; HB/F-growthfact.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; ILIHGF.
DR PRODOM: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF; 1.

DR PROSITE: PS00247; HBGF_FGF; 1.
SQ SEQUENCE 196 AA; 21203 MW; D6B5447137E60343 CRC64;

Query Match
Best Local Similarity 98.6%; Score 776; DB 44; Length 196;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 PALPEDGSGAAPPFGHFKDPKRLKCKNGGFLLRHPDGRVDGYREKSDPHIKLQLAER 60
DB 51 PALPEDGSGAAPPFGHFKDPKRLKCKNGGFLLRHPDGRVDGYREKSDPHIKLQLAER 110
QY 61 GVSISGVCANRYLAKKEDGRILASKCVDECFEERLESNNYNTYRSKYSWYALKR 120
DB 111 GVSISGVCANRYLAKKEDGRILASKCVDECFEERLESNNYNTYRSKYSWYALKR 170
QY 121 TGQYKLGSKTGPQKAILFLPMASAKS 146
DB 171 TGQYKLGSKTGPQKAILFLPMASAKS 196

RESULT 2
Q925A3 PRELIMINARY; PRT; 153 AA.

AC 0925A3;
DT 01-DEC-2001 (TREMBlrel. 19, Created)
DT 01-DEC-2001 (TREMBlrel. 19, Last sequence update)
DE 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RN SEQUENCE FROM N.A.
RA STRAIN=FVB/N;
RA Dirke R.P., Griep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
RT expressed in mouse embryos." to the EMBL/GenBank/DBJ databases.
RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL: A027551; AAK52308.1;
DR InterPro: IPR002209; HB/F_growthfact.
DR Pfam: PF00167; FGF_1.
DR ProDom: PD000831; HB/F_growthfact; 1.
SQ SEQUENCE 153 AA; 17024 MW; AD8163CD8FA2FAAB CRC64;

Query Match
Best Local Similarity 93.9%; Score 739; DB 11; Length 153;
Matches 140; Conservative 3; Mismatches 1; Indels 2; Gaps 2;

QY 1 PALPEDGSGAAPPFGHFKDPKRLKCKNGGFLLRHPDGRVDGYREKSDPHIKLQLAER 60
DB 10 PALPEDGGA-AAPPFGHFKDPKRLKCKNGGFLLRHPDGRVDGYREKSDPHIKLQLAER 68
QY 61 GVSISGVCANRYLAKKEDGRILASKCVDECFEERLESNNYNTYRSKYSWYALKR 120
DB 69 GVSISGVCANRYLAKKEDGRILASKCVDECFEERLESNNYNTYRSKYSWYALKR 127
QY 121 TGQYKLGSKTGPQKAILFLPMASAKS 146
DB 128 TGQYKLGSKTGPQKAILFLPMASAKS 153

RESULT 3
Q60487 PRELIMINARY; PRT; 170 AA.

AC 060487;
DT 01-NOV-1996 (TREMBlrel. 01, Created)
DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Fibroblast growth factor 2 (FGF-2) (Fibroblast growth factor, basic)
DE (HBGF) (Heparin-binding growth factor 2) (HBGF-2) (Prostatropin)
DE (Prostatic growth factor) (Fragments).

GN FGF2.
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriocognathi; Cavidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RN SEQUENCE OF 53-170 FROM N.A.
RP TISSUE=PROSTATE;
RC Ricciardelli C.;
RA Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.
RN [2]
RN SEQUENCE OF N-TERMINUS, PARTIAL SEQUENCE, AND ALTERNATIVE SPLICING.
RP MEDLINE=89273588; PubMed=2730645;
RX Sommer A., Moscatelli D., Rifkin D.B.;
RT "An amino-terminally extended and post-translationally modified form
RT of a 25KD basic fibroblast growth factor";
RL Biochem. Biophys. Res. Commun. 160:1267-1274(1989).
RN [3]
RN PARTIAL SEQUENCE, AND METHYLATION.
RX MEDLINE=91322114; PubMed=1713785;
RA Burgess W.H., Bizik J., Mehlman T., Quarto N., Rifkin D.B.;
RT "Direct evidence for methylation of arginine residues in high
RT molecular weight forms of basic fibroblast growth factor";
RL Cell Regul. 2:87-93(1991).
RN [4]
RN CHARACTERIZATION.
RC TISSUE=BRAIN;
RX MEDLINE=87289686; PubMed=3475702;
RA Moscatelli D., Joseph-Silverstein J., Manejias R., Rifkin D.B.;
RT "Mr 25,000 heparin-binding protein from guinea pig brain is a high
RT molecular weight form of basic fibroblast growth factor";
RL Proc. Natl. Acad. Sci. U.S.A. 84:5778-5782(1987).
CC -1- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTROPHIC
CC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC
CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND
CC HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOATTRACTANT FOR
CC MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION,
CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS
CC SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
CC ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
CC -1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFRL AND AT LEAST
CC ONE HEPARAN SULFATE (BY SIMILARITY).
CC -1- ALTERNATIVE PRODUCTS: AT LEAST TWO ISOFORMS: 18 KDA AND 25 KDA
CC (SHOWN HERE). MAY BE PRODUCED BY USE OF ALTERNATIVE TRANSLATION
CC INITIATION SITES. BOTH FORMS ARE ACTIVE.
CC -1- PTM: THE N-TERMINAL OF ISOFORM 18 KDA IS BLOCKED (PROBABLE).
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -1- CAUTION: THIS IS A CONCEPTUAL TRANSLATION; MANY FRAMESHIFTS WERE
CC INTRODUCED FROM RESIDUES 77, 88, 93 AND 149 DOWNWARD TO EXTEND THE
CC SIMILARITY TO THE HUMAN SEQUENCE AS WELL AS ON THE BASIS OF
CC PARTIAL AMINO-ACID SEQUENCING.
CC EMBL: L75974; AAA85394.1; ALT_FRAME.
DR HSSP: P09038; 1BLA.
DR InterPro: IPR002209; HB/F_growthfact.
DR InterPro: IPR002348; IIL_HBGF.
DR PRINTS: PR00263; IILHBGF.
DR ProDom: PD000831; HB/F_growthfact; 1.
DR SMART: SM00442; FGF_1.
DR PROSITE: PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Vascularization; Heparin-binding;
KW Alternative initiation; Methylation; Phosphorylation;
KW Developmental protein.
FT NON_TER 1
FT NON_CONS 15
FT CHAIN <1 170
FT CHAIN 22 170
FT INIT_MET 22 22
FT DOMAIN 11 14
FT ON_CONS 50 51
FT TTE 61 63
FT TTE 103 105
FT LINDING 50 51
FT LINDING 105 105

25 KDA BASIC FIBROBLAST GROWTH FACTOR.
18 KDA BASIC FIBROBLAST GROWTH FACTOR.
FOR 18 KDA FORM.
POLY-ALA.
CELL ATTACHMENT SITE (POTENTIAL).
CELL ATTACHMENT SITE (POTENTIAL).
HEPARIN (BY SIMILARITY).
HEPARIN (BY SIMILARITY).

FT BINDING 143 159 HEPARIN (BY SIMILARITY).
 FT MOD_RES 4 4 METHYLATION (MONO- OR DI-).
 FT MOD_RES 6 6 METHYLATION (MONO- OR DI-).
 FT MOD_RES 8 8 METHYLATION (MONO- OR DI-).
 FT MOD_RES 88 88 PHOSPHORYLATION (BY SIMILARITY).
 FT MOD_RES 136 136 PHOSPHORYLATION (BY SIMILARITY).
 SQ SEQUENCE 170 AA; 18354 MW; F36BDC736E3EEB CRC64;

Query Match 88.8%; Score 699; DB 11; Length 170;
 Best Local Similarity 91.1%; Pred. No. 1.4e-68;
 Matches 133; Conservative 2; Mismatches 5; Indels 6; Gaps 1;

QY 1 PALPDEGSGAFPPGHEKDPKRLCKNGGFFLRHPDGRVDGVREKSDPHIKLQLAER 60
 DB 31 PALPDEGSGAFAPGHHFNDP-----NCGFFLRHPDGRVDGVREKSDPHIKLQLAER 84
 QY 61 GVSISIKVCANRYLAMKEDGRLLSKCVTDCEFFERLESNNYNTYRSKYSYVALKR 120
 DB 85 GVSISIKVCANRYLAMKEDGRLLSKCVTDCEFFERLESNNYNTYRSKYSYVALKR 144
 QY 121 TGOYKLGPKTGPQOKALFLPMSAKS 146
 DB 145 TGOYKLGSKTGPQOKALFLPMSAKS 170

RESULT 4

07767 PRELIMINARY; PRT; 130 AA.

AC 07767;
 DT 01-NOV-1998 (TREMBLrel. 08, Created)
 DT 01-NOV-1998 (TREMBLrel. 08, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (BFGF) (FGF-2) (Heparin-binding growth factor 2) (HBGF-2) (Prostatein) (Prostatic growth factor) (Fragment).
 DE (Fragment).
 GN BFGF.
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Flagellata; Canidae; Canis.
 OX NCBI_Taxid=9615;

RN SEQUENCE FROM N.A.
 RC TISSUE-ADRENAL GLAND;
 RA Trocheta O.A., Jacobs R.M., Lamire J.;
 RT "The role of bFGF in canine Hemangiosarcoma."
 RL Submitted (APR-1998) to the EMBL/Genbank/DBJ databases.
 CC -1- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROPROLIFERATIVE FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOTACTANT FOR MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION, PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
 CC -1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFR1 AND AT LEAST ONE HEPARAN SULFATE (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC EMBL; AF060562; AAC35912.1; -

DR EMBL; AF060562; AAC35912.1; -
 DR HSP; P09038; 1BPF.
 DR InterPro; IPR002209; HB/F-growthfact.
 DR Pfam; PF00167; FGF_1.
 DR PRINTS; PR00262; ILIHGF.
 DR ProDom; PD000831; HB/F-growthfact; 1.
 DR SMART; SM00442; FGF_1.
 DR PROSITE; PS00247; HBGF_FGF_1.
 KW Growth factor; Mitogen; Vascularization; Heparin-binding; Phosphorylation; Developmental protein.
 FT SITE 21 23 CELL ATTACHMENT SITE (POTENTIAL).
 FT SITE 63 65 CELL ATTACHMENT SITE (POTENTIAL).
 FT BINDING 10 11 HEPARIN (BY SIMILARITY).
 FT BINDING 65 65 HEPARIN (BY SIMILARITY).

FT BINDING 103 119 HEPARIN (BY SIMILARITY).
 FT MOD_RES 48 48 PHOSPHORYLATION (BY SIMILARITY).
 FT MOD_RES 96 96 PHOSPHORYLATION (BY SIMILARITY).
 FT MOD_RES 130 130 PHOSPHORYLATION (BY SIMILARITY).
 SQ SEQUENCE 130 AA; 14902 MW; 2190087EB78FAEA CRC64;

Query Match 88.1%; Score 693; DB 6; Length 130;
 Best Local Similarity 99.2%; Pred. No. 4.6e-68;
 Matches 129; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 17 FKDKRLCKNGGFFLRHPDGRVDGVREKSDPHIKLQLAERGVISIKVCANRYLAM 76
 DB 1 FKDKRLCKNGGFFLRHPDGRVDGVREKSDPHIKLQLAERGVISIKVCANRYLAM 60
 QY 77 KEDGRLLSKCVTDCEFFERLESNNYNTYRSKYSYVALKRGTGKLPKTPGQKA 136
 DB 61 KEDGRLLSKCVTDCEFFERLESNNYNTYRSKYSYVALKRGTGKLPKTPGQKA 120
 QY 137 ILFLPMSAKS 146
 DB 121 ILFLPMSAKS 130

RESULT 5

09092 PRELIMINARY; PRT; 155 AA.

AC 09092;
 DT 01-DEC-2001 (TREMBLrel. 19, Created)
 DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor-2.
 GN FGF-2.
 OS Cynops pyrrhogaster (Japanese common newt).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Caudata; Salamandridae; Cynops.
 OX NCBI_Taxid=8330;

RN SEQUENCE FROM N.A.
 RA Susaki K., Nakamura K., Chiba C., Saito T.;
 RT "Expression of FGF2 during newt retinal development and regeneration."
 RL Submitted (JUL-2001) to the EMBL/Genbank/DBJ databases.
 DR EMBL; AB064664; BAB63249.1; -
 DR InterPro; IPR002209; HB/F-growthfact.
 DR Pfam; PF00167; FGF_1.
 DR ProDom; PD000831; HB/F-growthfact; 1.
 DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
 SQ SEQUENCE 155 AA; 17278 MW; 2B58305838AB8D9 CRC64;

Query Match 84.5%; Score 665; DB 13; Length 155;
 Best Local Similarity 85.6%; Pred. No. 6.6e-65;
 Matches 125; Conservative 7; Mismatches 14; Indels 0; Gaps 0;

QY 1 PALPDEGSGAFPPGHEKDPKRLCKNGGFFLRHPDGRVDGVREKSDPHIKLQLAER 60
 DB 10 PALPDEGSGTFFPGGFKRKLCKNGGFFLRHPDGRVDGVREKSDPHIKLQLAER 69
 QY 61 GVSISIKVCANRYLAMKEDGRLLSKCVTDCEFFERLESNNYNTYRSKYSYVALKR 120
 DB 70 GVSISIKVCANRYLAMKEDGRLLSKCVTDCEFFERLESNNYNTYRSKYSYVALKR 129
 QY 121 TGOYKLGPKTGPQOKALFLPMSAKS 146
 DB 130 TGOYKLGSKTGPQOKALFLPMSAKS 155

RESULT 6

080F9 PRELIMINARY; PRT; 155 AA.

AC 080F9;
 DT 01-JUN-2002 (TREMBLrel. 21, Created)
 DT 01-JUN-2002 (TREMBLrel. 21, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)


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DE Basic fibroblast growth factor.
GN Fg2.
OS Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorphi; Acanthopterygii; Percomorpha; Tetraodontiformes;
OC Tetraodontidae; Takifugu.
OX NCBI_TaxID=31033;
RN [1]
RP SEQUENCE FROM N.A.
RA Botcherby M.R.;
RT "Comparative vertebrate genomic sequence analysis studies based on
RT Fugu rubripes."
RL Thesis (2001), University College London, London, United Kingdom.
DR EMBL: AJ426040; CAD19830.1;
SQ SEQUENCE 155 AA; 17113 MW; ABEF12DBDC78FB8E CRC64;

Query Match 74.7%; Score 588; DB 13; Length 155;
Best Local Similarity 77.2%; Pred. No. 1,8e-56;
Matches 112; Conservative 4; Mismatches 29; Indels 0; Gaps 0;

QY 1 PALPEDGGGAFPPGHFDPKRYCKNGFFLRHHPDGRVGVREKSDPHIKLOLAER 60
Db 10 PSTPEDGGSGFPESFDPKRYCKNGFFLRHSDGAVDGTREKTDPHIKLOLAATSV 69
QY 61 GVSIVSGVCANRYLAMKEDGRLASCVTDECFEERLESNNYNTYRSKYSWYVALKR 120
Db 70 GEVVIKGVCANRYLAMNDGRLFGMKRATDECHFLERLESNNYNTYRSKYPNMFVGLTR 129
QY 121 TGQYKLGPKRTGPGKAILFLPMSAK 145
Db 130 TGNKXSGTKGTGPGKAILFLPMSAK 154

RESULT 7
Q9BDX1 PRELIMINARY; PRT; 111 AA.
ID Q9BDX1;
AC Q9BDX1;
DT 01-JUN-2001 (TREMBlrel. 17, Created)
DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Basic fibroblast growth factor (Fragment).
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecinae; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RA Sekhon H.S., Keller J.K., Spindel E.R.;
RT "Alterations in Collagen and Elastin Gene Expression in Fetal
RT Pulmonary Vessels in Monkeys Following Prenatal Nicotine Exposure: A
RT Possible Role of alpha7 Nicotinic Acetylcholine Receptor in Persistent
RT Pulmonary Hypertension."
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF231270; AAK37962.1;
DR HSSP: P09038; 2FGF.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF.1.
DR PRINTS: PR00262; IL1HBGF.
DR ProDom: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF.1.
DR PROSITE: PS00247; HBGF_FGF.1.
FT NON_TER 1
FT NON_TER 1
SQ SEQUENCE 111 AA; 12633 MW; EC0967A5261F5487 CRC64;

Query Match 73.2%; Score 576; DB 6; Length 111;
Best Local Similarity 98.2%; Pred. No. 2,4e-55;
Matches 109; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 34 IHPDGRVGVREKSDPHIKLOLAERGVVSIVKVCANRYLAMKEDGRLASKCVTDEC 93

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Db 1 IHPDGRVGVREKSDPHIKLOLAERGVVSIVKVCANRYLAMKEDGRLASKCVTDEC 60
QY 94 FFEERLESNNYNTYRSKYSWYVALKRTGQYKLGPKTGPQKAILFLPMSA 144
Db 61 FFEERLESNNYNTYRSKYSWYVALKRTGQYKLGPKTGPQKAILFLPMSA 111

RESULT 8
Q9N1S7 PRELIMINARY; PRT; 108 AA.
ID Q9N1S7;
AC Q9N1S7;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Basic fibroblast growth factor (Fragment).
GN BRGF.
OS Capreolus capreolus (Roe deer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoidae;
OC Cervidae; Odocoileinae; Capreolus.
OX NCBI_TaxID=9858;
RN [1]
RP SEQUENCE FROM N.A.
RA Tissue-Testis;
RC MEDLINE=20532861; PubMed=11078967;
RX Wagener A., Biotner S., Goritz F., Fickel J.;
RT "Detection of growth factors in the testis of roe deer (Capreolus
RT capreolus)."
RL Anim. Reprod. Sci. 64:65-75(2000).
DR EMBL: AF152587; AAF73226.1;
DR HSSP: P09038; 4FGF.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF.1.
DR PRINTS: PR00262; IL1HBGF.
DR ProDom: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF.1.
DR PROSITE: PS00247; HBGF_FGF.1.
FT NON_TER 1
FT NON_TER 1
SQ SEQUENCE 108 AA; 12399 MW; 6BC7B7244214567E CRC64;

Query Match 72.7%; Score 572; DB 6; Length 108;
Best Local Similarity 100.0%; Pred. No. 6,3e-55;
Matches 108; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 33 RIHPDGRVGVREKSDPHIKLOLAERGVVSIVKVCANRYLAMKEDGRLASKCVTDEC 92
Db 1 RIHPDGRVGVREKSDPHIKLOLAERGVVSIVKVCANRYLAMKEDGRLASKCVTDEC 60
QY 93 FFEERLESNNYNTYRSKYSWYVALKRTGQYKLGPKTGPQKAILFL 140
Db 61 FFEERLESNNYNTYRSKYSWYVALKRTGQYKLGPKTGPQKAILFL 108

RESULT 9
Q98TD8 PRELIMINARY; PRT; 125 AA.
ID Q98TD8;
AC Q98TD8;
DT 01-JUN-2001 (TREMBlrel. 17, Created)
DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Fibroblast growth factor-2 (Fragment).
GN FGF-2.
OS Cynops pyrrhogaster (Japanese common newt).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Phibia; Batrachia; Caudata; Salamandridae; Salamandridae; Cynops.
OX NCBI_TaxID=3330;
RN [1]
RP SEQUENCE FROM N.A.
RA Iizuno N., Hayashi T., Kondoh H., Okamoto M.;
RT Cynops fibroblast growth factor-2."

```

RL Submitted (OCT-2000) to the EMBL/Genbank/DBJ databases.
DR EMBL; AB049625; BAB40835.1; -.
DR HSP; P09038; 1BFF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR PRODOM; PD000831; HB/F_growthfact; 1.
DR SMART; SMO0442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
DR NON_TER 1
FT SEQUENCE 125 AA; 14244 MW; 5C27F41DC6E60C13 CRC64;
SQ
Query Match 71.8%; Score 565; DB 13; Length 125;
Best Local Similarity 87.1%; Pred. No. 4,5e-54;
Matches 108; Conservative 6; Mismatches 10; Indels 0; Gaps 0;
OY 23 LCKNGGFLRHPDGRVGVREKSDPHIKLOLAERGVSIGVCANRYLAMKEDGRL 82
DB 2 LCKNGGFLRLNSDGRVGVREKSDPHIKLOLAERGVSIGVCANRYLAMKEDGRL 61
OY 83 LASKCVTDECFEERLESNNYNTSRKYSWYVALKRTGPKTGPGRKAILFLPM 142
DB 62 MALKWITDECFEERLESNNYNTSRKYSWYVALKRTGPKTGPGRKAILFLPM 121
OY 143 SAKS 146
DB 122 SAKS 125
RESULT 10
OY25A1 PRELIMINARY; PRT; 109 AA.
ID 0925A1
AC 0925A1
DT 01-DEC-2001 (TREMBLrel. 19, Created)
DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N;
RA Dirks R.P., Griep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
expressed in mouse embryos.";
RL Submitted (FEB-2001) to the EMBL/Genbank/DBJ databases.
DR EMBL; AY027558; AAK52310.1; -.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR PRODOM; PD000831; HB/F_growthfact; 1.
DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
SQ SEQUENCE 109 AA; 12388 MW; 61074ADE3303C860 CRC64;
Query Match 62.0%; Score 488; DB 11; Length 109;
Best Local Similarity 97.9%; Pred. No. 1e-45;
Matches 94; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
OY 51 IKLOLAERGVSIGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTSRK 110
DB 14 IKLOLAERGVSIGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTSRK 73
OY 111 YSSWYVALKRTGPKTGPGRKAILFLPM 146
DB 74 YSSWYVALKRTGPKTGPGRKAILFLPM 109
RESULT 11

OY25A2 PRELIMINARY; PRT; 112 AA.
ID 0925A2
AC 0925A2
DT 01-DEC-2001 (TREMBLrel. 19, Created)
DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N;
RA Dirks R.P., Griep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
expressed in mouse embryos.";
RL Submitted (FEB-2001) to the EMBL/Genbank/DBJ databases.
DR EMBL; AY027557; AAK52309.1; -.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR PRODOM; PD000831; HB/F_growthfact; 1.
DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
SQ SEQUENCE 112 AA; 12725 MW; B00557ABE0257CCB CRC64;
Query Match 61.5%; Score 484; DB 11; Length 112;
Best Local Similarity 97.9%; Pred. No. 2,8e-45;
Matches 93; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
OY 52 KLOLAERGVSIGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTSRK 111
DB 18 KLOLAERGVSIGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTSRK 77
OY 112 SSWYVALKRTGPKTGPGRKAILFLPM 146
DB 78 SSWYVALKRTGPKTGPGRKAILFLPM 112
RESULT 12
OY25A2 PRELIMINARY; PRT; 146 AA.
ID 007659
AC 007659
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Fibroblast growth factor.
GN BFGF.
OS Gallus gallus (Chicken).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC Gallus.
OX NCBI_TaxID=9031;
RN [1]
RP SEQUENCE FROM N.A.
RC MEDLINE=93246053; PubMed=7683281;
RX MEDLINE=93246053; PubMed=7683281;
RA Borja A.Z., Zeller R., Meljers C.;
RT "Expression of alternatively spliced bfgf first coding exons and
antisense mRNAs during chicken embryogenesis.";
RL dev. Biol. 157:110-118(1993).
RN [2]
RP SEQUENCE OF 52-85 FROM N.A.
RX MEDLINE=90382254; PubMed=2401202;
RA Mitani E., Greenbaum Y., Shohat H., Ziv T.;
RT "Fibroblast growth factor during mesoderm induction in the early chick
embryo.";
RL Development 109:387-393(1990).
DR EMBL; M95706; AAA48616.1; -.
DR EMBL; X56804; CAA40139.1; -.
DR HSP; P09038; 2BFF.
DR InterPro; IPR002209; HB/F_growthfact.

DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.
 DR PRINTS: PR00262; IL1HBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF_1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 SQ SEQUENCE 146 AA; 16182 MW; A7CB97BCB456E247 CRC64;

Query Match 60.9%; Score 479.5; DB 13; Length 146;
 Best Local Similarity 67.1%; Pred. No. 1.2e-44;
 Matches 98; Conservative 7; Mismatches 14; Indels 27; Gaps 2;

QY 1 PALPEOGSGAAPPGRHKKDKRLCKNGGFLLHPDGRDVGREKSDPHIKILOAER 60
 DB 28 PSLSPDGGV-----LWERYRPDERYSAM-----VKILOAER 60
 QY 61 GVSISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNNTYRSKYSWYVALKR 120
 DB 61 GVSISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNNTYRSKYSWYVALKR 120
 QY 121 TGOYKLGPKTGPCKAILFLPMSAKS 146
 DB 121 TGOYKLGPKTGPCKAILFLPMSAKS 146

RESULT 13
 ID P79706 PRELIMINARY; PRT; 101 AA.
 AC P79706;
 DT 01-MAY-1997 (TrEMBLrel. 03, Created)
 DT 01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
 DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
 DE Basic FGF (fragment).
 OS Cynops pyrrhogaster (Japanese common newt).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Caudata; Salamandroidae; Salamandridae; Cynops.
 NC NCBITaxID=8330;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=EMBryo;
 RA Suzuki A.S., Tabata T., Sakaguchi K., Takabatake T., Takeshima K.,
 RA Kaneda T.;
 RT "Serial expression of the genes in a mesodermallyzing ectoderms of
 RT early Cynops gastrula.";
 RL Submitted (NOV-1996) to the EMBL/GenBank/DBJ databases.
 DR EMBL: D89443; BAA13958.1; -.
 DR HSSP: P09038; 4FGF.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.
 DR PRINTS: PR00262; IL1HBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF_1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 FT NON_TER 1
 FT NON_TER 1
 SQ SEQUENCE 101 AA; 11907 MW; 7AA16C866C1F457A CRC64;

Query Match 60.9%; Score 479; DB 13; Length 101;
 Best Local Similarity 88.1%; Pred. No. 8.8e-45;
 Matches 89; Conservative 6; Mismatches 6; Indels 0; Gaps 0;

QY 20 PKRLYCNNGGFLLIHPDGRDVGREKSDPHIKILOAERGVVSIGVCANRYLAMKED 79
 DB 1 PKRLYCNNGGFLLIHPDGRDVGREKSDPHIKILOAERGVVSIGVCANRYLAMKED 60
 QY 80 GRLASCVTDECFEERLESNNNTYRSKYSWYVALKR 120
 DB 61 GRLASCVTDECFEERLESNNNTYRSKYSWYVALKR 101

RESULT 14
 Q8WMP4

ID Q8WMP4 PRELIMINARY; PRT; 87 AA.
 AC Q8WMP4;
 DT 01-MAR-2002 (TrEMBLrel. 20, Created)
 DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
 DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2 (fragment).
 GN FGF2.
 OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 NC NCBITaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=ENDOMETRIUM;
 RA Einspanier R.;
 RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=ENDOMETRIUM;
 RA Welter H.;
 RL Thesis (2002), Department of Physiology, University of Munich,
 RL Freising, Germany.
 DR EMBL: AJ319906; CAC86028.1; -.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.
 DR PRINTS: PR00262; IL1HBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF_1.
 DR PROSITE: PS00247; HBGF_FGF; UNKNOWN_1.
 FT NON_TER 1
 FT NON_TER 1
 SQ SEQUENCE 87 AA; 10128 MW; 52382DDE0245739E CRC64;

Query Match 58.4%; Score 460; DB 6; Length 87;
 Best Local Similarity 100.0%; Pred. No. 8.7e-43;
 Matches 87; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 32 LRIHPDGRDVGREKSDPHIKILOAERGVVSIGVCANRYLAMKEDGRLASKCVTDE 91
 DB 1 LRIHPDGRDVGREKSDPHIKILOAERGVVSIGVCANRYLAMKEDGRLASKCVTDE 60
 QY 92 CFEERLESNNNTYRSKYSWYVAL 118
 DB 61 CFEERLESNNNTYRSKYSWYVAL 87

RESULT 15
 ID Q9NOV2 PRELIMINARY; PRT; 76 AA.
 AC Q9NOV2;
 DT 01-OCT-2000 (TrEMBLrel. 15, Created)
 DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
 DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (fragment).
 GN FGF-2.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 NC NCBITaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=FETAL PLACENTAL ARTERY;
 RA Zheng J., Tsol S.C., Magness R.R.;
 RT "Growth factor expression in ovine fetal placental artery endothelial
 RT cells.";
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL: AF250027; AAF65566.1; -.
 DR SP: P09038; 4FGF.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.

DR PRINTS; PR00262; ILIHGF.
 DR PRODOM; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 FT NON_TER 1 1
 FT NON_TER 76 76
 SQ SEQUENCE 76 AA: 8796 MW: 7D984E2F97453B20 CRC64;

Query Match 43.5%; Score 342; DB 6; Length 76;
 Best Local Similarity 100.0%; Pred. No. 6e-30;
 Matches ,65; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 48 DPHIKLQQAERGVYSIKVCANRYLAKKEDGRLASKCVTDECFFFERLESNNYNTYR 107
 DB 1 DPHIKLQQAERGVYSIKVCANRYLAKKEDGRLASKCVTDECFFFERLESNNYNTYR 60
 QY 108 SRKYS 112
 DB 61 SRKYS 65

Search completed: December 4, 2002, 11:12:12
 Job time : 27.5 secs

091886856

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:06:33 ; Search time 32 Seconds
(without alignments)
607.956 Million cell updates/sec

Title: US-09-886-856-4

Perfect score: 785
Sequence: 1 PALPEDGSGAFPFGHFKDP.....GSKTGPCOKAIFLPMGSAKS 146

Scoring table:
BIOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Database : Listing first 45 summaries

1: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1960.DAT:*
2: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1981.DAT:*
3: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1982.DAT:*
4: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1983.DAT:*
5: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1984.DAT:*
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17: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1996.DAT:*
18: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1997.DAT:*
19: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1998.DAT:*
20: /SID52/gcgdata/geneeq/geneeqp-emb1/AA1999.DAT:*
21: /SID52/gcgdata/geneeq/geneeqp-emb1/AA2000.DAT:*
22: /SID52/gcgdata/geneeq/geneeqp-emb1/AA2001.DAT:*
23: /SID52/gcgdata/geneeq/geneeqp-emb1/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|--------------|--------------------|
| 1 | 785 | 100.0 | 146 | 9 AAP82579 | Human basic fibrob |
| 2 | 785 | 100.0 | 146 | 13 AAP825423 | bFGF derivative. |
| 3 | 785 | 100.0 | 146 | 21 AA87847 | Human FGF-2 protei |
| 4 | 785 | 100.0 | 146 | 22 AA811974 | Human fibroblast g |
| 5 | 785 | 100.0 | 146 | 22 AAG62612 | Human basic insuli |
| 6 | 785 | 100.0 | 146 | 23 AA821683 | Human fibroblast g |
| 7 | 785 | 100.0 | 146 | 23 AA812079 | Human fibroblast g |
| 8 | 785 | 100.0 | 148 | 13 AAP22233 | bFGF truncated at |
| 9 | 785 | 100.0 | 153 | 16 AAP71414 | Human basic fibrob |
| 10 | 785 | 100.0 | 154 | 16 AAP71413 | Human basic fibrob |

| | | | | | |
|----|-----|-------|-----|-------------|--------------------|
| 11 | 785 | 100.0 | 154 | 17 AAP89473 | Human basic fibrob |
| 12 | 785 | 100.0 | 154 | 23 AAP80967 | Human basic fibrob |
| 13 | 785 | 100.0 | 154 | 23 AAP83829 | Human bFGF related |
| 14 | 785 | 100.0 | 155 | 8 AAP70301 | Sequence of human |
| 15 | 785 | 100.0 | 155 | 10 AAP94038 | Human basic fibrob |
| 16 | 785 | 100.0 | 155 | 11 AAP05314 | Human basic fibrob |
| 17 | 785 | 100.0 | 155 | 13 AAP22232 | bFGF truncated at |
| 18 | 785 | 100.0 | 155 | 14 AAP40159 | Human bFGF peptide |
| 19 | 785 | 100.0 | 155 | 15 AAP33270 | glu3.5 bFGF. Hom |
| 20 | 785 | 100.0 | 155 | 16 AAP80777 | Fibroblast growth |
| 21 | 785 | 100.0 | 155 | 16 AAP70204 | Human bFGF. Homo |
| 22 | 785 | 100.0 | 155 | 16 AAP70823 | FGF-2. Homo sapie |
| 23 | 785 | 100.0 | 155 | 18 AAP33338 | Human fibronectin |
| 24 | 785 | 100.0 | 155 | 18 AAP19595 | Biologically activ |
| 25 | 785 | 100.0 | 155 | 19 AAP05456 | Fibronectin recept |
| 26 | 785 | 100.0 | 155 | 19 AAP75712 | Fibroblast growth |
| 27 | 785 | 100.0 | 155 | 19 AAP71386 | SVV mutant of fibr |
| 28 | 785 | 100.0 | 155 | 19 AAP71379 | 18 kDa form of fib |
| 29 | 785 | 100.0 | 155 | 19 AAP53023 | Fibroblast growth |
| 30 | 785 | 100.0 | 155 | 20 AAP93380 | 18 kD isoform of h |
| 31 | 785 | 100.0 | 155 | 21 AAP10298 | Fibroblast growth |
| 32 | 785 | 100.0 | 155 | 21 AAP96873 | Human fibroblast g |
| 33 | 785 | 100.0 | 155 | 21 AAP96885 | Human fibroblast g |
| 34 | 785 | 100.0 | 155 | 21 AAP96893 | Human fibroblast g |
| 35 | 785 | 100.0 | 155 | 21 AAP90411 | FGF-2 (bFGF), SEQ |
| 36 | 785 | 100.0 | 155 | 21 AAP90448 | Human FGF-2 (bFGF) |
| 37 | 785 | 100.0 | 155 | 21 AAP32334 | Human fibroblast g |
| 38 | 785 | 100.0 | 155 | 22 AAG65648 | Human fibroblast g |
| 39 | 785 | 100.0 | 155 | 22 AAP11976 | Human fibroblast g |
| 40 | 785 | 100.0 | 155 | 22 AAP85813 | Human fibroblast g |
| 41 | 785 | 100.0 | 155 | 22 AAP89918 | Human FGF-2 protei |
| 42 | 785 | 100.0 | 155 | 22 AAG64317 | Human FGF-2 protei |
| 43 | 785 | 100.0 | 155 | 22 AAG64847 | Heart muscle cell |
| 44 | 785 | 100.0 | 155 | 22 AAP84597 | Amino acid sequenc |
| 45 | 785 | 100.0 | 155 | 22 AAP72909 | Truncated form of |

ALIGNMENTS

RESULT 1
AAP82579
ID AAP82579 standard; protein; 146 AA.
XX
AC AAP82579;
XX
DT 02-NOV-1990 (first entry)
XX
XX Human basic fibroblast growth factor.
DE Human basic fibroblast growth factor.
XX
XX Basic fibroblast growth factor; anticancer agent; bFGF.
KM Homo sapiens.
OS
XX
XX
XX EP288687-A.
XX
XX 02-NOV-1988.
PD
XX
XX
XX 01-MAR-1988; 88EP-0103047.
PF
XX
XX 03-MAR-1987; 87JP-0049759.
PR 26-AUG-1987; 87JP-0211599.
PR 26-JAN-1988; 88JP-0016260.
XX
XX (TAKE) TAKEDA CHEMICAL IND KK.
PA
XX Iwane M, Kurokawa T, Igarashi K;
XX WPI; 1988-308739/44.
XX N-PSDB; AAN82192.
XX
XX New monoclonal antibodies specific for basic fibroblast growth
PT factor - used in immunoassay, purification, and as anticancer agent.

XX Disclosure: ; p; English.

XX DNA encoding the protein was isolated from a cDNA library prep.

CC from mRNA from human foreskin derived primary culture cell. It

CC can be used to produce recombinant hBFGF for prodn. of Mabs

CC specific for bFGF (do not cross react with acidic FGF). High

CC purity bFGF is also useful for promoting healing of burns and

CC wounds and, due to its neovascularising action, to treat thrombosis

CC and arteriosclerosis.

CC See also AAN82193 and AAN82194.

XX

SO Sequence 146 AA;

Query Match 100.0%; Score 785; DB 9; Length 146;

Best Local Similarity 100.0%; Pred. No. 1.8e-75;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPEDGSSGAFPPGHFDPKRLCYCKNGGFLRLHPDGRVGVREKSPHKLQQAER 60

DB 1 PALPEDGSSGAFPPGHFDPKRLCYCKNGGFLRLHPDGRVGVREKSPHKLQQAER 60

OY 61 GVSISIKVCANRYLAMKEDGRLLASKCYTDECFEERLESNNYNTYRSRKYTSWYALKR 120

DB 61 GVSISIKVCANRYLAMKEDGRLLASKCYTDECFEERLESNNYNTYRSRKYTSWYALKR 120

OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

RESULT 2

AAR25423

ID AAR25423 standard; protein; 146 AA.

XX

AC AAR25423;

DT 06-JAN-1993 (first entry)

XX

DE bFGF derivative.

XX

KW Human: basic fibroblast growth factor; recombinant; wound healing;

KW revascularise; regenerate; neural tissue.

XX

OS Homo sapiens.

XX

XX

XX Key Location/Qualifiers

FT Modified-site 69

FT /note- "derivatised with an agent capable of forming

FT a covalent S-C bond with Cys"

FT Modified-site 89

FT /note- "derivatised with an agent capable of

FT forming a covalent S-C bond with Cys"

XX

XX EP494664-A.

XX

XX 15-JUL-1992.

XX

XX 09-JAN-1992; 92EP-0100257.

XX

XX 09-JAN-1991; 91GB-0000381.

XX

XX (FARM) FARMITALIA ERBA SRL CARLO.

XX

XX Bertolero F, Caccia P, Calet G, Nitti G;

XX

XX WPI, 1992-235730/29.

XX

XX Derived basic fibroblast growth factor - for treating ulcers,

XX regenerating damaged neural tissue, aiding tissue transplant or

XX bone graft and revascularising ischaemic tissue

XX

PS Claim 2; Page 3; 20pp; English.

XX The sequence is that of a recombinant human basic fibroblast growth

CC factor which has at least on of the four cysteine residues (pref.

CC Cys 69 and Cys 87) derivatised with an agent able to form a covalent

CC S-C bond with Cys. Typical agents include iodoacetic acid,

CC haloacetamide, alkyl tetrahalonates, alkyl methanethiosulphonates

CC and 1-6C alkylsulphonates. The derivatised bFGF is used to accelerate

CC the healing of wounds (including burns, ulcers, transplants, and

CC bone grafts), to revascularise ischaemic tissue or to regenerate

CC damaged neural tissue. Compared with native bFGF the recombinant

CC derivatised bFGF has better biological activity and stability (esp.

CC not aggregating by dimer formation) and is also easier to isolate.

XX

SO Sequence 146 AA;

Query Match 100.0%; Score 785; DB 13; Length 146;

Best Local Similarity 100.0%; Pred. No. 1.8e-75;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPEDGSSGAFPPGHFDPKRLCYCKNGGFLRLHPDGRVGVREKSPHKLQQAER 60

DB 1 PALPEDGSSGAFPPGHFDPKRLCYCKNGGFLRLHPDGRVGVREKSPHKLQQAER 60

OY 61 GVSISIKVCANRYLAMKEDGRLLASKCYTDECFEERLESNNYNTYRSRKYTSWYALKR 120

DB 61 GVSISIKVCANRYLAMKEDGRLLASKCYTDECFEERLESNNYNTYRSRKYTSWYALKR 120

OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

RESULT 3

AA87847

ID AA87847 standard; protein; 146 AA.

XX

AC AA87847;

DT 01-SEP-2000 (first entry)

XX

DE Human FGF-2 protein.

XX

KW FGF-2; fibroblast growth factor; cardiact; treatment; angiogenesis;

KW coronary artery disease; myocardial infarction injury; human.

XX

OS Homo sapiens.

XX

XX

XX Key Location/Qualifiers

FT Modified-site 69

FT /note- "derivatised with an agent capable of forming

FT a covalent S-C bond with Cys"

FT Modified-site 89

FT /note- "derivatised with an agent capable of

FT forming a covalent S-C bond with Cys"

XX

XX WO200021548-A2.

XX

XX 20-APR-2000.

XX

XX 13-OCT-1999; 99WO-US22936.

XX

XX 13-OCT-1998; 98US-0104103.

XX

XX (CHIR) CHIRON CORP.

XX

XX (WHIT/) WHITEHOUSE M J.

XX

XX Kavanaugh MM;

XX

XX WPI, 2000-317840/27.

XX

XX Novel unit dose comprising fibroblast growth factor, its angiogenically

XX active fragment or mutein for inducing cardiac angiogenesis, treating

XX coronary artery disease and reducing post myocardial infarction injury

XX

PS aim 1; Page 56-57; 67pp; English.

XX

XX is invention describes a novel unit dose (I), of fibroblast growth

XX factor (FGF) comprising 0.008-6.1 mg of a mammalian FGF comprising

XX sequence of 140 ((II) and ((III)) 146 ((IV) and ((V)) 205 ((VI), 266

XX ((VII), 207 ((VIII) and ((XI)), 215 ((IX), and 208 ((X) amino acids (aa),

CC given in the specification, its angiogenically active fragment or
CC mutein. The product of the invention has angiogenic and cardiac
CC activity. (1) is used for treating a human patient for coronary artery
CC disease, and inducing angiogenesis in the human heart. (1) further
CC provides an adjunct for reducing post myocardial infarction injury in
CC humans. The unit dose provides the human patient with a rapid and
CC therapeutic cardiac angiogenesis sufficient to obviate surgical
CC intervention and results in an superior increase in the treated
CC patients' exercise tolerance time (ETT). It also provides a safe and
CC therapeutically efficacious treatment for the patients with coronary
CC artery disease that lasts at least 6 months before a further treatment
CC is needed. The method provides superior increase of 1.5-2 minutes in
CC the treated patient's (ETT), compared to an increase of 30 seconds for
CC current modes treatment. This sequence represents the human FGF-2 protein
CC fragment described in the method of the invention.

XX Sequence 146 AA;

Query Match 100.0%; Score 785; DB 21; Length 146;
Best Local Similarity 100.0%; Pred. No. 1.8e-75;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSSGAFPPGHFDPKRLVCKNGGFLRIHPDGRVDGVRKSDPHIKLQDAER 60
DB 1 PALPDDGSSGAFPPGHFDPKRLVCKNGGFLRIHPDGRVDGVRKSDPHIKLQDAER 60
DY 61 GVSTIKGVCANRYLAMKEDGRLLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 120
DB 61 GVSTIKGVCANRYLAMKEDGRLLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 120
QY 121 TGQYKLGSKTGPGRKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPGRKAILFLPMSAKS 146

RESULT 4
AAE11974
ID AAE11974 standard; Protein: 146 AA.

XX AAE11974;

DT 18-DEC-2001 (first entry)

DE Human fibroblast growth factor-2 (FGF-2) #1.

KW Human; therapy; erectile dysfunction; fibroblast growth factor-2; FGF-2;

KW epidermal growth factor; EGF; platelet derived growth factor; PDGF;

KW vascular endothelial growth factor; VEGF; tissue growth factor; TGF;

XX Impotence; vasotrophic.

XX Homo sapiens.

XX WO200168125-A2.

XX 20-SEP-2001.

XX 09-MAR-2001; 2001WO-US07702.

XX 10-MAR-2000; 2000US-188480P.

XX 11-MAY-2000; 2000US-203415P.

XX (CHIR) CHIRON CORP.

XX Whitehouse MJ;

XX WPI; 2001-616273/71.

XX N-PSDB; AAD19521.

XX Treating or preventing erectile dysfunction, comprises administering
XX growth factor, particularly fibroblast growth factor to blood vessels
XX in the penis, groin or leg
XX Claim 6; Page 32; 35pp; English.

XX The present invention relates to a method for treating or preventing
CC erectile dysfunction, comprising administering a fibroblast growth
CC factor (FGF), epidermal growth factor (EGF), platelet derived growth
CC factor (PDGF), vascular endothelial growth factor (VEGF) or tissue
CC growth factor (TGF). The invention is used to treat or prevent erectile
CC dysfunction, or impotence. The present sequence is a human FGF-2
CC protein.

XX Sequence 146 AA;

Query Match 100.0%; Score 785; DB 22; Length 146;
Best Local Similarity 100.0%; Pred. No. 1.8e-75;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSSGAFPPGHFDPKRLVCKNGGFLRIHPDGRVDGVRKSDPHIKLQDAER 60
DB 1 PALPDDGSSGAFPPGHFDPKRLVCKNGGFLRIHPDGRVDGVRKSDPHIKLQDAER 60
QY 61 GVSTIKGVCANRYLAMKEDGRLLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 120
DB 61 GVSTIKGVCANRYLAMKEDGRLLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 120
QY 121 TGQYKLGSKTGPGRKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPGRKAILFLPMSAKS 146

RESULT 5
AAG62612
ID AAG62612 standard; Protein: 146 AA.

XX AAG62612;

DT 06-SEP-2001 (first entry)

DE Human basic insulin-like growth factor 1.

KW Human; insulin-like growth factor 1; IGF-1; neuronal damage prevention;

KW central nervous system insult; hypothermia; neuroprotective;

KW Ischaemia cerebrovascular disease.

XX Homo sapiens.

XX WO200137855-A2.

XX 31-MAY-2001.

XX 26-OCT-2000; 2000WO-US41591.

XX 27-OCT-1999; 99US-0161798.

XX (CHIR) CHIRON CORP.

XX Gluckman PD, Guan J, Gunn AJ;

XX WPI; 2001-355748/37.

XX Preventing or treating neuronal damage of the central nervous system,
XX comprises modulating the cerebral temperature and administering a
XX neurological therapeutic agent

XX Disclosure; Page 40-41; 41pp; English.

XX The present invention describes a method of preventing or treating
CC neuronal damage following a central nervous system insult, involving
CC modulating the cerebral temperature and administering a neurologic
CC therapeutic agent. The agent may be a growth factor, such as fibroblast
CC growth factor (FGF) or insulin-like growth factor (IGF). The method is
CC particularly useful in the treatment of ischaemia cerebrovascular
CC disease. The present sequence is the human basic IGF protein.
XX Sequence 146 AA;

| Query Match | 100.0% | Score 785 | DB 22 | Length 146 |
|-----------------------|---|--|-------------|------------|
| Best Local Similarity | 100.0% | Pred. NO.1.8e-75 | | |
| Matches 146 | Conservative 0 | Mismatches 0 | Indels 0 | Gaps 0 |
| QY | 1 | PALPEDGGSGAPPGHFHKDPKRLKCKNGGFFLRIHPDGRVDGVREKSDPHIKIQLQAEER | 60 | |
| DB | 1 | PALPEDGGSGAPPGHFHKDPKRLKCKNGGFFLRIHPDGRVDGVREKSDPHIKIQLQAEER | 60 | |
| QY | 61 | GVVSIKGVCANRYLAKKEDGRLASKCYTDECFFERLESNNYNTYRSKRYTSYVALKR | 120 | |
| DB | 61 | GVVSIKGVCANRYLAKKEDGRLASKCYTDECFFERLESNNYNTYRSKRYTSYVALKR | 120 | |
| QY | 121 | TGOYKLGSKTGPCKAKILFLPMSAKS | 146 | |
| DB | 121 | TGOYKLGSKTGPCKAKILFLPMSAKS | 146 | |
| RESULT 6 | | | | |
| AAE21683 | | | | |
| ID | AAE21683 | standard; Protein; 146 AA. | | |
| AC | AAE21683; | | | |
| XX | | | | |
| DT | 16-JUL-2002 | (first entry) | | |
| XX | | | | |
| DE | Human fibroblast growth factor-2 (FGF-2) partial protein. | | | |
| KW | Human; pharmaceutical composition; fibroblast growth factor; FGF; | | | |
| KM | tissue regeneration; therapy; wound; ischaemic heart disease; stroke; | | | |
| KM | bone fracture healing; vulnery; cerebroprotective; vasotrophic. | | | |
| XX | | | | |
| OS | Homo sapiens. | | | |
| XX | | | | |
| PN | W0200217956-A2. | | | |
| XX | | | | |
| PD | 07-MAR-2002. | | | |
| XX | | | | |
| PF | 31-AUG-2001: 2001WO-US27209. | | | |
| XX | | | | |
| PR | 31-AUG-2000: 2000US-229238P. | | | |
| XX | | | | |
| PA | (CHIR) CHIRON CORP. | | | |
| XX | | | | |
| PI | Hageman RV, Shirley BA, Bajwa KK; | | | |
| XX | | | | |
| DR | WPI; 2002-329732/36. | | | |
| XX | | | | |
| DR | N-PSDB; AAD34054. | | | |
| XX | | | | |
| PT | Stabilized pharmaceutical composition comprising fibroblast growth | | | |
| PT | factor or its variant, and reducing agent to inhibit oxidation of | | | |
| PT | fibroblast growth factor, useful for promoting wound healing and | | | |
| PT | treating stroke | | | |
| XX | | | | |
| XX | | | | |
| XX | Disclosure; Page 47; 52pp; English. | | | |
| CC | The invention relates to pharmaceutical composition comprising stabilised | | | |
| CC | fibroblast growth factor (FGF) or its variant, methods for increasing | | | |
| CC | storage stability of FGF or its variant in a liquid or lyophilised | | | |
| CC | composition is also provided. The method is useful for increasing storage | | | |
| CC | stability of a pharmaceutical composition comprising FGF or its variant | | | |
| CC | which becomes oxidised during storage. The pharmaceutical composition is | | | |
| CC | useful for promoting tissue regeneration, treating wounds, ischaemic | | | |
| CC | heart diseases, stroke and is used for bone fracture healing. The present | | | |
| CC | sequence is human FGF-2 partial protein. | | | |
| XX | | | | |
| XX | Sequence 146 AA; | | | |
| Query Match | 100.0% | Score 785; DB 23; | Length 146; | |
| Best Local Similarity | 100.0% | Pred. No.1.8e-75; | | |
| Matches 146 | Conservative 0 | Mismatches 0 | Indels 0 | Gaps 0 |
| QY | 1 | PALPEDGGSGAPPGHFHKDPKRLKCKNGGFFLRIHPDGRVDGVREKSDPHIKIQLQAEER | 60 | |

Db 1 PALEDDSSGAFPPGHKRDPRRLCKNGGFILRIHPGRADVGRENSDPINKLOAEER 60

OY 61 GVVSISIKGVCANRYLAMKEDEGRLLASKCVTDECFFEEFLLESNNNTYRSRRKYTSWVALKR 120
DB 61 GVSISIKGVCANRYLAMEDEGRLLASKCVTDECFFEEFLLESNNNTYRSRKYTSWVALKR 120

OY 121 TGQYKLGSKTGPCKAILFPLMSAKS 146
DB 121 TGQYKLGSKTGPCKAILFPLMSAKS 146

RESULT 7
AAU12079
ID AAU12079 standard; Protein; 146 AA.
XX
AC
AAU12079;
XX
D7 09-APR-2002 (first entry)
XX
DE Human fibroblast growth factor-2 (FGF-2).
XX
KW Human: peripheral artery disease; PAD; fibroblast growth factor-2;
KW FGF-2; peak walking time; ankle brachial index; body pain;
KW stair climbing ability; claudication; critical limb ischaemia; stroke;
KW cardiovascular disorder; diabetes; dyslipidaemia; hypertension.
XX
OS Homo sapiens.
XX
FN WO200198346-A2.
PD 27-DEC-2001.
PF 22-JUN-2001; 2001WO-US19978.
PR 22-JUN-2000; 2000US-213504P.
PR 26-JAN-2001; 2001US-264572P.
PR 16-MAR-2001; 2001US-276549P.
PR 21-JUN-2001; 2001US-0886856.
XX
PA (CHIR) CHIRON CORP.
XX
PI Whitehouse MJ;
DR WPI: 2002-147794/19.
N-PDB: MAS20934.

PT Treating peripheral artery disease, for improving peak walking time and
PT ankle brachial index with intermittent claudication in a patient,
PT comprises administering fibroblast growth factor in two doses at one
hour interval -
XX
PS Claim 11; Fig 3; 99pp; English.

The present invention relates to compositions and methods for treating peripheral artery disease. The method comprises administering fibroblast growth factor-2 (FGF-2) to a patient in two doses, where a single dose is administered into each leg of the patient within a one hour period. FGF-2 is useful for treating peripheral artery disease, improving peak walking time with intermittent claudication, improving ankle brachial index with intermittent claudication, reducing body pain, improving stair climbing ability and reducing the severity of the claudication. FGF-2 is also useful for treating or preventing peripheral artery disease (PAD) including claudication and critical limb ischemia, and even those suffering from a wide spectrum of related initial ailments including coronary artery disease (CAD), myocardial infarctions, stroke, diabetes, dyslipidaemias, hypertension and patients who have had surgical or catheter-based revascularisations. The present sequence represents human FGF-2.

sequence 146 AA;

Query Match 100.0%; Score 785; DB 23; Length 146;

Best Local Similarity 100.0%; Pred. No. 1.8e-75;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

| | | | |
|----|-----|---|-----|
| Qy | 1 | PALPEDESSAGFPFGHKRDPRLCYCKNGGFLRTHPDGRVDGVKESDPHKJLOLAEER | 60 |
| Db | 1 | PALPEDESSAGFPFGHKRDPRLCYCKNGGFLRTHPDGRVDGVKESDPHKJLOLAEER | 60 |
| Qy | 61 | GVASIKGCANRYAMKEDGRILASKCVTQECFFPERLESNNYTRYSRKYSWYVALKR | 120 |
| Db | 61 | GVASIKGCANRYAMKEDGRILASKCVTQECFFPERLESNNYTRYSRKYSWYVALKR | 120 |
| Qy | 121 | TGQYKLSGKTGPGOKAILFLPMsAKS | 146 |
| Db | 121 | TGQYKLSGKTGPGOKAILFLPMsAKS | 146 |

RESULT 8
AAR22233
ID AAR22233 standard; Protein; 148 AA

| | | | | |
|-----------------------|-----------------|--------------------|-----------|-------------|
| Query Match | 100.0%; | Score 785; | DB 13; | Length 148; |
| Best Local Similarity | 100.0%; | Pred. No. 1.9e-75; | | |
| Matches 146; | Conservative 0; | Mismatches 0; | Indels 0; | Gaps 0; |

| | | | |
|----|-----|--|-----|
| Qy | 1 | PALEDGSSGAFPPGHKRDPRLYCKNGGFLRIHPDGVADGVREKSDPIKIQLOAEER | 60 |
| Db | 3 | PALEDGSSGAFPPGHKRDPRLYCKNGGFLRIHPDGVADGVREKSDPIKIQLOAEER | 62 |
| Qy | 61 | GVVSIKGVCAARYLAMEDEGLLASKCVTBECFFPEERLESNNNTYRSRYTSMYVALKR | 120 |
| Db | 63 | GVVSIKGVCAARYLAMEDEGLLASKCVTBECFFPEERLESNNNTYRSRYTSMYVALKR | 122 |
| Qy | 121 | TGQYKLGSKTGPQOKAILFLPMsAKS | 146 |
| Db | 123 | TGQYKLGSKTGPQOKAILFLPMsAKS | 148 |

RESULT 9
AAR71414
ID AAR71414 standard; protein; 153 AA

| | Query Match | Similarity | Score | DB | Length |
|---------|-------------|---|--------|------------|---------|
| Best | Local | Similarity | 100.0% | 100.0% | 1.9e-75 |
| Matches | 146 | Conservative | 0 | Mismatches | 0 |
| | | | | Indels | 0 |
| | | | | Gaps | 0 |
| QY | 1 | PALPEDGGGAAEPGGHFKDPKRLCYKNGGFFLRHPDGRVGYREKSDPHIKLOQAEER | 60 | | |
| | | | | | |
| Db | 8 | PALPEDGGGAAEPGGHFKDPKRLCYKNGGFFLRHPDGRVGYREKSDPHIKLOQAEER | 67 | | |
| | | | | | |
| QY | 61 | GYVSIKGVANRIKAAKEGRLASGVYDECFEERLESNNYTRSKKYSWYALKR | 120 | | |
| | | | | | |

Db 68 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYTSWYALKR 127
 QY 121 TGOYKLSKSTGPGOKAILFLPMSAKS 146
 Db 128 TGOYKLSKSTGPGOKAILFLPMSAKS 153

RESULT 10

AAR71413
 ID AAR71413 standard; protein; 154 AA.

AC AAR71413;

DT 18-OCT-1995 (first entry)

DE Human basic fibroblast growth factor.

KW basic fibroblast growth factor; bFGF; homo sapiens; human; gel;

KM periodontal disease; regeneration; re-attachment; bone; membrane;

KW cementum; dentine.

XX Homo sapiens.

OS WO9505840-A.

PN 02-MAR-1995.

PD 25-AUG-1993; 93WO-JP01211.

PR 25-AUG-1993; 93WO-JP01211.

XX (KAKE) KAKEN PHARM CO LTD.

XX Amakawa M, Asano T, Nakano Y, Saga K, Sugimoto H;

PI Terashima A;

DR WPI: 1995-106672/14.

PT Dental treatment containing basic fibroblast growth factor - for

PT treating periodontal disease and promoting implant fixation and

PT dentine regeneration

PS Claim 7; Page 18; 35pp; Japanese.

XX This is a basic fibroblast growth factor (bFGF) of human origin. It

CC is used in a compsn. to treat periodontal disease. The compsn.

CC promotes regeneration an re-attachment of the bone of the tooth

CC socket, the periodontal membrane and the cementum and regeneration

CC of dentine. The bFGF may be prepd. by recombinant methods, and is

CC pref. formulated in a gel for application to the affected area.

XX Sequence 154 AA;

SO

Query Match

Best Local Similarity 100.0%; Score 785; DB 16; Length 154;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSSGAFPPGHFDPKRLCYCKNGFFLRHPDGRVDSVREKSDPHIKLQIAEER 60

Db 9 PALPDDGSSGAFPPGHFDPKRLCYCKNGFFLRHPDGRVDSVREKSDPHIKLQIAEER 68

QY 61 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYTSWYALKR 120

Db 69 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYTSWYALKR 128

QY 121 TGOYKLSKSTGPGOKAILFLPMSAKS 146

Db 129 TGOYKLSKSTGPGOKAILFLPMSAKS 154

RESULT 11

AAR89473

ID AAR89473 standard; protein; 154 AA.

XX AAR89473;

AC 08-AUG-1996 (first entry)

DT Human basic fibroblast growth factor.

DE Human; basic fibroblast growth factor; bFGF; oral mucosal disease; mouth;

KW stomatitis; inflammation; chemotherapy; radioactive treatment; deletion.

XX Homo sapiens.

OS Key Location/Qualifiers

FT MISC-difference 1 /note= "this residue may be opt. deleted"

PN JP08027024-A.

PD 30-JAN-1996.

PF 12-JUL-1994; 94JP-0182791.

PR 12-JUL-1994; 94JP-0182791.

XX (KAKE) KAKEN PHARM CO LTD.

XX WPI: 1996-136204/14.

PT Agent for treating oral mucosa diseases - contg. basic fibroblast

PT growth factor as active component, where diseases are caused by

PT chemotherapy or radioactive treatment

XX Disclosure; Page 7; 8pp; Japanese.

CC This is the amino acid of the human basic fibroblast growth factor used

CC in a novel method of treating oral mucosal disease esp. stomatitis and

CC mucosal inflammation caused by chemotherapy or by radioactive treatment.

CC The same protein lacking the N-terminal Ala can also be used in the

CC treatment.

XX Sequence 154 AA;

SO

Query Match

Best Local Similarity 100.0%; Score 785; DB 17; Length 154;

Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSSGAFPPGHFDPKRLCYCKNGFFLRHPDGRVDSVREKSDPHIKLQIAEER 60

Db 9 PALPDDGSSGAFPPGHFDPKRLCYCKNGFFLRHPDGRVDSVREKSDPHIKLQIAEER 68

QY 61 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYTSWYALKR 120

Db 69 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYTYRSRKYTSWYALKR 128

QY 121 TGOYKLSKSTGPGOKAILFLPMSAKS 146

Db 129 TGOYKLSKSTGPGOKAILFLPMSAKS 154

RESULT 12

ABBO9967

ID ABBO9967 standard; Protein; 154 AA.

AC ABBO9967;

DT 08-OCT-2002 (first entry)

DE Human basic fibroblast growth factor_155.

KW sic fibroblast growth factor_155; bFGF_155; photoSLEX; photocrosslink;

KW LEX; photoaplayer; human.

XX homo sapiens.

XX WO200206510-A2.
 XX
 XX 24-JAN-2002.
 XX
 XX 18-JUL-2001; 2001WO-US22561.
 XX
 XX 19-JUL-2000; 2000US-0619213.
 XX
 XX (SOMA-) SOMALOGIC INC.
 XX
 XX Gold L, Smith JD, Koch T, Golden M;
 XX
 XX WPI; 2002-179798/23.
 XX
 XX Identifying nucleic acid ligands photocrosslinking to target from
 XX nucleic acids containing photoreactive groups, by modification of
 XX systematic evolution of ligands by exponential enrichment method,
 XX termed photoSELEX -
 XX
 XX Disclosure: Page 6; 105pp; English.
 XX
 XX The sequence represents human basic fibroblast Growth Factor 155
 XX (bFGF 155). The invention relates to a novel method for identifying
 XX nucleic acid ligands that photocrosslink to a target from a candidate
 XX mixture of nucleic acids which contain one or more photoreactive groups,
 XX by a modification of the systematic evolution of ligands by exponential
 XX enrichment (SELEX) method, termed photoSELEX. The use of photocaptamer as
 XX a capture molecule in a diagnostic assay adds an extra dimension of
 XX specificity and supplants the need for sandwich assays.
 XX
 XX Sequence 154 AA;
 XX
 XX Query Match 100.0%; Score 785; DB 23; Length 154;
 XX Best Local Similarity 100.0%; Pred. No. 1.9e-75;
 XX Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX QY 1 PALPEDGGGAGAPPFGHFKDPKRLKCKNGGFLLRIHPDGRVDGVRKSDPHIKILOAEEER 60
 XX |||||||
 XX DB 9 PALPEDGGGAGAPPFGHFKDPKRLKCKNGGFLLRIHPDGRVDGVRKSDPHIKILOAEEER 68
 XX |||||||
 XX QY 61 GVSISGVCANRYLAKKEDGRLKSCVTDCEFFERLESNNYNTRSRKYTSWYVALKR 120
 XX |||||||
 XX DB 69 GVSISGVCANRYLAKKEDGRLKSCVTDCEFFERLESNNYNTRSRKYTSWYVALKR 128
 XX |||||||
 XX QY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
 XX |||||||
 XX DB 129 TGQYKLGSKTGPQKAILFLPMSAKS 154
 XX |||||||
 XX
 XX RESULT 13
 XX ABB83829
 XX ID ABB83829 standard; Protein; 154 AA.
 XX
 XX AC ABB83829;
 XX
 XX DT 16-SEP-2002 (first entry)
 XX
 XX DE Human bFGF related protein 2.
 XX
 XX KW Human; basic fibroblast growth factor; bFGF; extracellular secretion.
 XX
 XX OS Homo sapiens.
 XX
 XX PN KR2001111728-A.
 XX
 XX PD 20-DEC-2001.
 XX
 XX PF 13-JUN-2000; 2000KR-0032374.
 XX
 XX PR 13-JUN-2000; 2000KR-0032374.
 XX
 XX (JANG/) JANG Y S.

PA (PARK/) PARK H Y.
 XX
 XX PI Hwang GC, Jang YS, Kwon JH, Lim HJ, Park HY, Son YD;
 XX
 XX WPI; 2002-398942/43.
 XX
 XX DR N-PSDB; ABN85681.
 XX
 XX PT Recombinant genome of human originated basic fibroblast growth
 XX factor(bfgf) having increased extracellular secretion efficiency and
 XX its expression vector -
 XX
 XX Disclosure: Fig 6; 20pp; Korean.
 XX
 XX The invention relates to a recombinant genome of human originated basic
 XX fibroblast growth factor(bFGF) having increased extracellular secretion
 XX efficiency, an expression vector and therapeutics containing the gene
 XX and the vector. The present sequence is that of a polypeptide, useful
 XX to the invention.
 XX
 XX Sequence 154 AA;
 XX
 XX Query Match 100.0%; Score 785; DB 23; Length 154;
 XX Best Local Similarity 100.0%; Pred. No. 1.9e-75;
 XX Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX QY 1 PALPEDGGGAGAPPFGHFKDPKRLKCKNGGFLLRIHPDGRVDGVRKSDPHIKILOAEEER 60
 XX |||||||
 XX DB 9 PALPEDGGGAGAPPFGHFKDPKRLKCKNGGFLLRIHPDGRVDGVRKSDPHIKILOAEEER 68
 XX |||||||
 XX QY 61 GVSISGVCANRYLAKKEDGRLKSCVTDCEFFERLESNNYNTRSRKYTSWYVALKR 120
 XX |||||||
 XX DB 69 GVSISGVCANRYLAKKEDGRLKSCVTDCEFFERLESNNYNTRSRKYTSWYVALKR 128
 XX |||||||
 XX
 XX QY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
 XX |||||||
 XX DB 129 TGQYKLGSKTGPQKAILFLPMSAKS 154
 XX |||||||
 XX
 XX RESULT 14
 XX AAP70301
 XX ID AAP70301 standard; Protein; 155 AA.
 XX
 XX AC AAP70301;
 XX
 XX DT 05-JUN-1991 (first entry)
 XX
 XX DE Sequence of human basic fibroblast growth factor (bFGF).
 XX
 XX KW Fibroblast growth promoter; mesoderm cell growth promoter;
 XX wound healing.
 XX
 XX OS Homo sapiens.
 XX
 XX PN Key
 XX FH Reptide Location/Qualifiers
 XX FT Protein 1.9
 XX FT Protein 10.155
 XX FT Protein /note="claimed"
 XX
 XX PN EP237966-A.
 XX
 XX PD 23-SEP-1987.
 XX
 XX PF 12-MAR-1987; 87EP-0103601.
 XX
 XX PR 29-SEP-1986; 86JP-0231428.
 XX
 XX PR 14-MAR-1986; 86JP-0057919.
 XX
 XX PR 09-APR-1986; 86JP-0082599.
 XX
 XX PR 09-OCT-1986; 86JP-0241053.
 XX
 XX (TAKE) TAKEDA CHEMICAL IND KK.
 XX
 XX KUROKAWA T, SASADA R, IWANE M, IGARASHI K;

DR MPI: 1987-265363/38.
 DR N-PSDB: AAN70494.
 XX Human basic fibroblast growth factor - produced by recombinant
 PT DNA techniques, useful for healing wounds, prophylaxis,
 PT thrombosis and arteriosclerosis treatment, etc.
 XX
 PS Disclosure: Fig 1; 38pp; English.
 XX
 CC hBFGF is produced using cDNA prep'd. from RNA isolated from W138 or
 CC IM90 human fibroblasts. hBFGF promotes growth of fibroblasts and
 CC other mesoderm-derived cells and is useful for promoting healing of
 CC wounds (eg burns), for prophylaxis and treatment of thrombosis and
 CC arteriosclerosis, and as a promoter for cell culture.
 XX
 SQ Sequence 155 AA;
 Query Match 100.0%; Score 785; DB 8; Length 155;
 Best Local Similarity 100.0%; Pred. No. 2e-75;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PALPEDGSGAPPGHFKDPKRLCKNGGFRLRHPDGRVDCVREKSDPHIKLQAEER 60
 DB 10 PALPEDGSGAPPGHFKDPKRLCKNGGFRLRHPDGRVDCVREKSDPHIKLQAEER 69
 QY 61 GYVSIKGYCANRYLAKMKEDGRLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 120
 DB 70 GYVSIKGYCANRYLAKMKEDGRLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 129
 QY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146
 DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 15
 AAP94038
 ID AAP94038 standard: protein; 155 AA.
 XX
 AC AAP94038;
 XX
 DT 25-JUN-1990 (first entry)
 XX
 DE Human basic fibroblast growth factor.
 XX
 KW Basic fibroblast growth factor; pUC9-TSFl1; pUC9delH3-PTSF-3.
 XX
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 78 /label-Cys
 FT Misc-difference 96 /note="replaced by Ser or Ala"
 FT Misc-difference 128 /label-Lys
 FT Misc-difference 129 /note="replaced by Ser or Glu"
 FT Misc-difference 138 /label-Arg
 FT Misc-difference 138 /note="replaced by Thr"
 FT Domain 128..138 /label-Lys
 FT 128..138 /note="replaced by Ser"
 FT 128..138 /label-heparin-binding domain
 XX
 PN EP298723-A.
 XX
 PD 11-JAN-1989.
 XX
 PF 06-JUL-1988; 88EP-0306158.
 XX

PR 07-JUL-1987; 87US-0070797.
 XX
 XX (BIOT-) BIOTECHN RES ASSOC.
 XX
 XX Fildes JC, Abraham JA, Protter A;
 PI
 DR MPI: 1989-009785/02.
 DR N-PSDB: AAN93087.
 XX
 PT Recombinant DNA encoding new fibroblast growth factor
 PT analogues - useful eg for accelerating wound healing and
 PT to control neovascularisation.
 XX
 PS Disclosure: d 1-2; 44pp; English.
 XX
 CC DNA encoding the sequence may be mutated to encode an analogue, of human
 CC basic fibroblast growth factor (bFGF) bFGF-C78/965, which has reduced
 CC affinity for heparin. One or more positively-charged AAs in the heparin-
 CC binding domain (AAs 128-138) are replaced by neutral or negatively-
 CC charged residues as indicated in the feature table. A recombinant vector
 CC (pUC9-TSFl1 or pUC9delH3-PTSF-3) contg. the mutated DNA can be used to
 CC transform bacterial or mammalian host cells for prodn. of the analogue.
 CC See also AAP94038.
 XX
 SQ Sequence 155 AA;
 Query Match 100.0%; Score 785; DB 10; Length 155;
 Best Local Similarity 100.0%; Pred. No. 2e-75;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PALPEDGSGAPPGHFKDPKRLCKNGGFRLRHPDGRVDCVREKSDPHIKLQAEER 60
 DB 10 PALPEDGSGAPPGHFKDPKRLCKNGGFRLRHPDGRVDCVREKSDPHIKLQAEER 69
 QY 61 GYVSIKGYCANRYLAKMKEDGRLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 120
 DB 70 GYVSIKGYCANRYLAKMKEDGRLASKCYTDECFFERLESNNYNTYRSKRYTSWYALKR 129
 QY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146
 DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

Search completed: December 4, 2002, 11:11:13
 Job time : 33 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:10:08 ; Search time 11.5 Seconds
(without alignments)
373.543 Million cells updates/sec

Title: US-09-886-856-4

Perfect score: 785
Sequence: 1 PALPEDGSGAFPPGHRKDP.....GSKTGPQKALFLPMASAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

Issued_Patents_AA.*
1: /cgn2_6/ptodata/1/1aa/5A.COMB.pep.*
2: /cgn2_6/ptodata/1/1aa/5B.COMB.pep.*
3: /cgn2_6/ptodata/1/1aa/6A.COMB.pep.*
4: /cgn2_6/ptodata/1/1aa/6B.COMB.pep.*
5: /cgn2_6/ptodata/1/1aa/PCRTUS.COMB.pep.*
6: /cgn2_6/ptodata/1/1aa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|---------------|-------|----------------|--------|----------|-------------------|
| 1 | 785 | 100.0 | 146 | 2 | US-08-231-894A-11 |
| 2 | 785 | 100.0 | 146 | 4 | US-09-417-721-3 |
| 3 | 785 | 100.0 | 153 | 3 | US-08-325-186-2 |
| 4 | 785 | 100.0 | 154 | 2 | US-08-438-439C-24 |
| 5 | 785 | 100.0 | 154 | 3 | US-08-325-186-1 |
| 6 | 785 | 100.0 | 154 | 5 | PCR-US91-02186-6 |
| 7 | 785 | 100.0 | 155 | 1 | US-07-959-369-6 |
| 8 | 785 | 100.0 | 155 | 1 | US-08-023-757-2 |
| 9 | 785 | 100.0 | 155 | 1 | US-07-842-177A-1 |
| 10 | 785 | 100.0 | 155 | 1 | US-08-177-502-2 |
| 11 | 785 | 100.0 | 155 | 1 | US-08-439-725A-10 |
| 12 | 785 | 100.0 | 155 | 1 | US-08-325-632-1 |
| 13 | 785 | 100.0 | 155 | 1 | US-08-462-169B-10 |
| 14 | 785 | 100.0 | 155 | 2 | US-08-867-471-10 |
| 15 | 785 | 100.0 | 155 | 2 | US-08-438-439C-14 |
| 16 | 785 | 100.0 | 155 | 2 | US-08-951-822-28 |
| 17 | 785 | 100.0 | 155 | 2 | US-09-103-079-10 |
| 18 | 785 | 100.0 | 155 | 3 | US-08-705-245-6 |
| 19 | 785 | 100.0 | 155 | 3 | US-08-897-924A-25 |
| 20 | 785 | 100.0 | 155 | 3 | US-08-718-904-11 |
| 21 | 785 | 100.0 | 155 | 3 | US-09-023-082A-17 |
| 22 | 785 | 100.0 | 155 | 3 | US-09-030-613-3 |
| 23 | 785 | 100.0 | 155 | 4 | US-09-098-628-2 |
| 24 | 785 | 100.0 | 155 | 4 | US-09-451-905-3 |
| 25 | 785 | 100.0 | 155 | 4 | US-09-240-952-4 |
| 26 | 785 | 100.0 | 155 | 4 | US-09-368-951-28 |
| 27 | 785 | 100.0 | 155 | 4 | US-09-366-009-3 |

| | | | | | | |
|----|-----|-------|-----|---|-------------------|--------------------|
| 28 | 785 | 100.0 | 155 | 4 | US-09-619-213B-99 | Sequence 99, Appl |
| 29 | 785 | 100.0 | 155 | 5 | PCT-US91-02186-2 | Sequence 2, Appl |
| 30 | 785 | 100.0 | 155 | 6 | 5514566-8 | Patent No. 5514566 |
| 31 | 785 | 100.0 | 158 | 2 | US-08-599-895-3 | Sequence 3, Appl |
| 32 | 785 | 100.0 | 158 | 3 | US-09-211-290-3 | Sequence 3, Appl |
| 33 | 785 | 100.0 | 158 | 3 | US-09-322-676-3 | Sequence 3, Appl |
| 34 | 785 | 100.0 | 158 | 4 | US-09-220-077C-2 | Sequence 2, Appl |
| 35 | 785 | 100.0 | 158 | 4 | US-09-466-036A-3 | Sequence 3, Appl |
| 36 | 785 | 100.0 | 210 | 1 | US-08-464-590A-14 | Sequence 14, Appl |
| 37 | 785 | 100.0 | 210 | 2 | US-08-207-412B-9 | Sequence 9, Appl |
| 38 | 785 | 100.0 | 210 | 3 | US-09-093-585-14 | Sequence 14, Appl |
| 39 | 785 | 100.0 | 235 | 1 | US-08-078-683A-39 | Sequence 39, Appl |
| 40 | 785 | 100.0 | 432 | 1 | US-07-959-369-8 | Sequence 8, Appl |
| 41 | 785 | 100.0 | 432 | 2 | US-08-836-854-20 | Sequence 20, Appl |
| 42 | 785 | 100.0 | 432 | 4 | US-09-366-009-4 | Sequence 4, Appl |
| 43 | 782 | 99.6 | 155 | 1 | US-07-959-369-7 | Sequence 7, Appl |
| 44 | 782 | 99.6 | 432 | 1 | US-07-959-369-9 | Sequence 9, Appl |
| 45 | 779 | 99.2 | 146 | 6 | 5464943-6 | Patent No. 5464943 |

ALIGNMENTS

RESULT 1
US-08-231-894A-11
Sequence 11, Application US/08231894A
Patent No. 5851990
GENERAL INFORMATION:
APPLICANT: FUJISHIMA, AKIRA
TITLE OF INVENTION: BRG MOTELIN AND ITS PRODUCTION
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: DAVID G. CONLIN; DIKE, BRONSTEIN, ROBERTS
STREET: 130 WATER STREET
CITY: BOSTON
STATE: MASSACHUSETTS
COUNTRY: US
ZIP: 02109
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ Version 1.5
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/231,894A
FILING DATE: 22-APR-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/873907
FILING DATE: 24-APR-1992
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 097655-1991
FILING DATE: 26-APR-1991
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 066381-1992
FILING DATE: 24-MAR-1992
ATTORNEY/AGENT INFORMATION:
NAME: RESNICK, DAVID S.
REGISTRATION NUMBER: 34235
REFERENCE/DOCKET NUMBER: 41769-FWC
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 523-3400
TELEFAX: (617) 523-6440
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 146 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: peptide

HYPOTHETICAL: NO
ANTI-SENSE: NO
FRAGMENT TYPE: Internal
ORIGINAL SOURCE:
US-08-231-894A-11

Query Match 100.0%; Score 785; DB 2; Length 146;
Best Local Similarity 100.0%; Pred. No. 1.8e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSSGAFPPGHFDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLQQAER 60
DB 1 PALPEDGSSGAFPPGHFDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLQQAER 60
QY 61 GVSISIKVCANRYLAMKEDGRILASKCVTDCEFFERLESNNYNTYRSRKYTSWYVALKR 120
DB 61 GVSISIKVCANRYLAMKEDGRILASKCVTDCEFFERLESNNYNTYRSRKYTSWYVALKR 120
QY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

RESULT 2
US-09-417-721-3
Sequence 3, Application US/09417721
Patent No. 6451303
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha J.
APPLICANT: Kavanaugh, Michael W.
TITLE OF INVENTION: Angiogenetically Effective Unit Dose of FGF and Method of
FILE REFERENCE: 1296/121690505
CURRENT APPLICATION NUMBER: US/09/417,721
CURRENT FILING DATE: 1999-10-13
PRIOR APPLICATION NUMBER: 60/104,103
PRIOR FILING DATE: 1998-10-13
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patent In Ver. 2.0
SEQ ID NO 3
LENGTH: 146
TYPE: PRT
ORGANISM: Human FGF-2
US-09-417-721-3

Query Match 100.0%; Score 785; DB 4; Length 146;
Best Local Similarity 100.0%; Pred. No. 1.8e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSSGAFPPGHFDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLQQAER 60
DB 1 PALPEDGSSGAFPPGHFDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLQQAER 60
QY 61 GVSISIKVCANRYLAMKEDGRILASKCVTDCEFFERLESNNYNTYRSRKYTSWYVALKR 120
DB 61 GVSISIKVCANRYLAMKEDGRILASKCVTDCEFFERLESNNYNTYRSRKYTSWYVALKR 120
QY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

RESULT 3
US-08-325-186-2
Sequence 2, Application US/08325186
Patent No. 6046164
GENERAL INFORMATION:
APPLICANT: ASANO, Taiji
APPLICANT: SUGIMOTO, Hajime
APPLICANT: TERASHIMA, Akio
APPLICANT: NAKANO, Yoshiko
APPLICANT: AMAKAWA, Masahiro
APPLICANT: SAGA, Katumasa

TITLE OF INVENTION: THERAPEUTIC AGENT FOR DISEASES OF PERIODONTAL
TISSUE

TITLE OF INVENTION: TISSUE

NUMBER OF SEQUENCES: 2

CORRESPONDENCE ADDRESS:

ADDRESSEE: Armstrong, Westernman, Hattori, Mclelland &

STREET: 1725 K St. N.W. Suite 1000

CITY: Washington

STATE: D.C.

COUNTRY: U.S.A.

ZIP: 20006

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette, 3.5 in, 1.44MB

OPERATING SYSTEM: IBM PC compatible

SOFTWARE: ASCII

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/325,186

FILING DATE: 24-MAY-95

CLASSIFICATION: 514

PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/JP93/01211

FILING DATE: 25-AUG-1993

ATTORNEY/AGENT INFORMATION:

NAME: Stevens-Smith, Theresa M.

REGISTRATION NUMBER: 36,281

REFERENCE/DOCKET NUMBER: 950319

TELECOMMUNICATION INFORMATION:

TELEPHONE: (202) 659-2930

TELEFAX: (202) 887-0357

TELEX: 440142

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: 153

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: protein

US-08-325-186-2

Query Match 100.0%; Score 785; DB 3; Length 153;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSSGAFPPGHFDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLQQAER 60
DB 8 PALPEDGSSGAFPPGHFDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLQQAER 67
QY 61 GVSISIKVCANRYLAMKEDGRILASKCVTDCEFFERLESNNYNTYRSRKYTSWYVALKR 120
DB 61 GVSISIKVCANRYLAMKEDGRILASKCVTDCEFFERLESNNYNTYRSRKYTSWYVALKR 120
QY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 153

RESULT 4
US-08-438-439C-24
Sequence 24, Application US/08438439C
Patent No. 5876967
GENERAL INFORMATION:
APPLICANT: Natans, Jeremy
APPLICANT: Smallwood, Phillip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA

ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/438,439C
FILING DATE: May 12, 1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Halle, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/046001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
INFORMATION FOR SEQ ID NO: 24:
SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-438-439C-24

Query Match 100.0%; Score 785; DB 2; Length 154;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSGAPPGHFKDPKRLCYCKNGGFLRIHPDGRVGVREKSDPHIKLOAER 60
DB 9 PALPDDGSGAPPGHFKDPKRLCYCKNGGFLRIHPDGRVGVREKSDPHIKLOAER 68
QY 61 GVSITKGVANRYLAKKEDGRLLASKCVYDECFEERLESNNYNYRSKRYTSMYALKR 120
DB 69 GVSITKGVANRYLAKKEDGRLLASKCVYDECFEERLESNNYNYRSKRYTSMYALKR 128
QY 121 TGOYKLGSTGPGOKAIIPLPMSAKS 146
DB 129 TGOYKLGSTGPGOKAIIPLPMSAKS 154

RESULT 5
US-08-325-186-1
Sequence 1, Application US/08325186
Patent No. 6046164
GENERAL INFORMATION:
APPLICANT: ASANO, Taiji
APPLICANT: SUGIMOTO, Hajime
APPLICANT: TERASHIMA, Akio
APPLICANT: NAKANO, Yoshiko
APPLICANT: AKAHAWA, Masahiro
APPLICANT: SAGA, Katumasa
TITLE OF INVENTION: THERAPEUTIC AGENT FOR DISEASES OF PERIODONTAL
TITLE OF INVENTION: TISSUE
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: Armstrong, Westerman, Hattori, Mclelland &
STREET: 1725 K St. N.W. Suite 1000
CITY: Washington
STATE: D.C.
COUNTRY: U.S.A.
ZIP: 20006
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 in, 1.44MB
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/325,186
FILING DATE: 24-MAY-95

CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/JP93/01211
FILING DATE: 25-AUG-1993
ATTORNEY/AGENT INFORMATION:
NAME: Stevens-Smith, Theresa M.
REGISTRATION NUMBER: 36,281
REFERENCE/DOCKET NUMBER: 950319
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 659-2930
TELEFAX: (202) 887-0357
TELEX: 440142
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 154
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-325-186-1

Query Match 100.0%; Score 785; DB 3; Length 154;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSGAPPGHFKDPKRLCYCKNGGFLRIHPDGRVGVREKSDPHIKLOAER 60
DB 9 PALPDDGSGAPPGHFKDPKRLCYCKNGGFLRIHPDGRVGVREKSDPHIKLOAER 68
QY 61 GVSITKGVANRYLAKKEDGRLLASKCVYDECFEERLESNNYNYRSKRYTSMYALKR 120
DB 69 GVSITKGVANRYLAKKEDGRLLASKCVYDECFEERLESNNYNYRSKRYTSMYALKR 128
QY 121 TGOYKLGSTGPGOKAIIPLPMSAKS 146
DB 129 TGOYKLGSTGPGOKAIIPLPMSAKS 154

RESULT 6
PCT-US91-02186-6
Sequence 6, Application PC/TUS9102186
GENERAL INFORMATION:
APPLICANT: California Biotechnology Inc.
APPLICANT: Inventors: Thompson, Stewart A.
APPLICANT: Abraham, Judith A.
TITLE OF INVENTION: High Level Expression of Basic
TITLE OF INVENTION: Fibroblast Growth Factor Having a Homogeneous
TITLE OF INVENTION: N-terminus
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: Irell & Manella
STREET: 545 Middlefield Road, Suite 200
CITY: Menlo Park
STATE: California
COUNTRY: USA
ZIP: 94025-3471
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02186
FILING DATE: 19910702
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Murashige, Kate H.
REGISTRATION NUMBER: 29,959
REFERENCE/DOCKET NUMBER: 1900-0275, 41
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-327-7250
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids

TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US91-02186-6

Query Match 100.0%; Score 785; DB 5; Length 154;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSSGAFPPGHFDPKRLCKNGGFLRIHPDGRVDGVREKSDPHIKLOQAEER 60
DB 9 PALPDDGSSGAFPPGHFDPKRLCKNGGFLRIHPDGRVDGVREKSDPHIKLOQAEER 68
QY 61 GVSISIKVCANRYLAMKEDGRLASKCYTDCFFERLESNNYNTYRSKRTSWYALKR 120
DB 69 GVSISIKVCANRYLAMKEDGRLASKCYTDCFFERLESNNYNTYRSKRTSWYALKR 128
QY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 129 TGQYKLGSKTGPQKAILFLPMSAKS 154

RESULT 7

US-07-959-369-6
Sequence 6, Application US/07959369
Patent No. 5302701
GENERAL INFORMATION:
APPLICANT: Hidetaka HASHI et al.
TITLE OF INVENTION: No. 5302701el Functional Polypeptide
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Wendeboth, Lind & Ponack
STREET: 805 Fifteenth Street, N.W., #700
CITY: Washington
STATE: D.C.
COUNTRY: U.S.A.
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 5.25 Inch, 500 kb
COMPUTER: IBM Compatible
OPERATING SYSTEM: MS-DOS
SOFTWARE: Wordperfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/959, 369
FILING DATE: 19921013
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Warren M. Cheek, Jr.
REGISTRATION NUMBER: 33,367
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-8850
TELEFAX:
TELEX:
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: polypeptide
HYPOTHETICAL:
ANTI-SENSE:
FRAGMENT TYPE:
ORIGINAL SOURCE:
ORGANISM:
STRAIN:
INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE:
HAPLOTYPE:

TISSUE TYPE:
CELL TYPE:
CELL LINE:
ORGANELLE:
IMMEDIATE SOURCE:
LIBRARY:

CLONE:
POSITION IN GENOME:
CHROMOSOME/SEGMENT:
MAP POSITION:
UNITS:
FEATURE:
NAME/KEY:
LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION:
PUBLICATION INFORMATION:
AUTHORS:

TITLE:
JOURNAL:
VOLUME:
ISSUE:
PAGES:
DATE:
DOCUMENT NUMBER:
FILING DATE:
PUBLICATION DATE:
RELEVANT RESIDUES IN SEQ ID NO:

US-07-959-369-6

Query Match 100.0%; Score 785; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDDGSSGAFPPGHFDPKRLCKNGGFLRIHPDGRVDGVREKSDPHIKLOQAEER 60
DB 10 PALPDDGSSGAFPPGHFDPKRLCKNGGFLRIHPDGRVDGVREKSDPHIKLOQAEER 69
QY 61 GVSISIKVCANRYLAMKEDGRLASKCYTDCFFERLESNNYNTYRSKRTSWYALKR 120
DB 70 GVSISIKVCANRYLAMKEDGRLASKCYTDCFFERLESNNYNTYRSKRTSWYALKR 129
QY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 8

US-08-023-757-2

Sequence 2, Application US/08023757

Patent No. 5302702

GENERAL INFORMATION:

APPLICANT: Seddon Dr., Andrew P.

APPLICANT: Bohlen Dr., Peter

APPLICANT: Gluzman Dr., Yakov

TITLE OF INVENTION: Chimeric Fibroblast Growth Factors

NUMBER OF SEQUENCES: 8

CORRESPONDENCE ADDRESS:

ADDRESSEE: American Cyanamid Company

STREET: 1937 West Main Street, P. O. Box 60

CITY: Stamford,

STATE: CT

COUNTRY: USA

ZIP: 06904-0060

COMPUTER READABLE FORM:

MEDIUM TYPE: floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

PRESENT APPLICATION DATA:

APPLICATION NUMBER: US/08/023, 757

FILING DATE: 26-FEB-1993

CLASSIFICATION: 530

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/615,202
FILING DATE: 23-NOV-1990
ATTORNEY/AGENT INFORMATION:
NAME: Tsevdos Dr., Estelle J.
REGISTRATION NUMBER: 31,145
REFERENCE/DOCKET NUMBER: 31,219-00
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203-321-2756
TELEFAX: 203-321-2971
TELEX: 710-474-4059
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-023-757-2

Query Match 100.0%; Score 785; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 1,9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGGGAPPFGHFKPKRLKCKNGGFELRIHPDGRVDGVRKSDPHIKLOAEER 60
DB 10 PALPEDGGGAPPFGHFKPKRLKCKNGGFELRIHPDGRVDGVRKSDPHIKLOAEER 69
QY 61 GVVSINGVCANRYLAKKEDGRLLASCVTDECFEERLESNNYNTYRSKRYTSWYVALKR 120
DB 70 GVVSINGVCANRYLAKKEDGRLLASCVTDECFEERLESNNYNTYRSKRYTSWYVALKR 129
QY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146
DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 9
US-07-842-177A-1
Sequence 1, Application US/07842177A
Patent No. 5348863
GENERAL INFORMATION:
APPLICANT: MONSIEUR, PIERRE
APPLICANT: PAUL, FRANCOIS
APPLICANT: BETBEDER, DIDIER
APPLICANT: SAMIENTOS, PAOLO
TITLE OF INVENTION: PROCESS FOR THE ENZYMAIC PREPARATION OF
TITLE OF INVENTION: BASIC FIBROBLAST GROWTH FACTOR
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: OBION, SPIVAK, MCLELLAND, MAIER & NEUSTADT,
ADDRESS: P.C.
STREET: 1755 Jefferson Davis Highway, Suite 400
CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/842,177A
FILING DATE: 19920402
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9017008.5
FILING DATE: 02-AUG-1990
ATTORNEY/AGENT INFORMATION:
NAME: Obion, No. 5348863man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 769-263-0 PCT
TELECOMMUNICATION INFORMATION:

TELEPHONE: (703) 521-4500
TELEFAX: (703) 486-2347
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
US-07-842-177A-1

Query Match 100.0%; Score 785; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 1,9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGGGAPPFGHFKPKRLKCKNGGFELRIHPDGRVDGVRKSDPHIKLOAEER 60
DB 10 PALPEDGGGAPPFGHFKPKRLKCKNGGFELRIHPDGRVDGVRKSDPHIKLOAEER 69
QY 61 GVVSINGVCANRYLAKKEDGRLLASCVTDECFEERLESNNYNTYRSKRYTSWYVALKR 120
DB 70 GVVSINGVCANRYLAKKEDGRLLASCVTDECFEERLESNNYNTYRSKRYTSWYVALKR 129
QY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146
DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 10
US-08-177-502-2
Sequence 2, Application US/08177502
Patent No. 5371206
GENERAL INFORMATION:
APPLICANT: Seddon Dr., Andrew P.
APPLICANT: Bohlen Dr., Peter
APPLICANT: Gluzman Dr., Yakov
TITLE OF INVENTION: Chimeric Fibroblast Growth Factors
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: American Cyanamid Company
STREET: 1937 West Main Street, P. O. Box 60
CITY: Stamford,
STATE: CT
COUNTRY: USA
ZIP: 06904-0060
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/177,502
FILING DATE: 05-JAN-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/023,757
FILING DATE: 26-FEB-1993
APPLICATION NUMBER: US/07/615,202
FILING DATE: 23-NOV-1990
ATTORNEY/AGENT INFORMATION:
NAME: Tsevdos Dr., Estelle J.
REGISTRATION NUMBER: 31,145
REFERENCE/DOCKET NUMBER: 31,219-00
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203-321-2756
TELEFAX: 203-321-2971
TELEX: 710-474-4059
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
TOPOLOGY: linear

MOLECULE TYPE: protein
US-08-177-502-2

Query Match 100.0%; Score 785; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDGSSGAPPPGHFKPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOQAEER 60
DB 10 PALPDGSSGAPPPGHFKPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOQAEER 69
QY 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSKRYTSWYALKR 120
DB 70 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSKRYTSWYALKR 129
QY 121 TGOYKLGSKTGPGRKAILFLPMSAKS 146
DB 130 TGOYKLGSKTGPGRKAILFLPMSAKS 155

RESULT 11
US-08-439-725A-10
Sequence 10, Application US/08439725A
Patent No. 5693775

GENERAL INFORMATION:
APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
TITLE OF INVENTION: FACTOR-1 (FHR-1) AND METHODS OF USE
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/439,725A
FILING DATE: 12-MAY-1995
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Hallie, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/047001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 617/678-5099
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-439-725A-10

Query Match 100.0%; Score 785; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDGSSGAPPPGHFKPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOQAEER 60
DB 10 PALPDGSSGAPPPGHFKPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOQAEER 69
QY 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSKRYTSWYALKR 120
DB 70 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSKRYTSWYALKR 129

DB 70 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSKRYTSWYALKR 129

QY 121 TGOYKLGSKTGPGRKAILFLPMSAKS 146
DB 130 TGOYKLGSKTGPGRKAILFLPMSAKS 155

RESULT 12
US-08-325-632-1
Sequence 1, Application US/08325632
Patent No. 5714458

GENERAL INFORMATION:
APPLICANT: ADAMI, MARCO
APPLICANT: DALLA CASA, ROSANNA
APPLICANT: GAMBINI, LUCIANO
APPLICANT: MAGRINI, ROBERTO
APPLICANT: MARINAI, ROSARIA
APPLICANT: PERRONE, GIOVANNI
TITLE OF INVENTION: STABLE PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: CONTAINING A FIBROBLAST GROWTH FACTOR
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT,
ADDRESS: P.C.
STREET: 1755 Jefferson Davis Highway, Fourth Floor
CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/325,632
FILING DATE:
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/966,077
FILING DATE:
APPLICATION NUMBER: GB 9015824.7
FILING DATE: 18-JUL-1990
ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5714458man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 769-288-0 PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)412-3000
TELEFAX: (703)413-2220
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-325-632-1

Query Match 100.0%; Score 785; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPDGSSGAPPPGHFKPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOQAEER 60
DB 10 PALPDGSSGAPPPGHFKPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOQAEER 69
QY 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSKRYTSWYALKR 120
DB 70 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSKRYTSWYALKR 129
QY 121 TGOYKLGSKTGPGRKAILFLPMSAKS 146

Db 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 13

US-08-462-169B-10
Sequence 10, Application US/08462169B
Patent No. 5773252

GENERAL INFORMATION:

APPLICANT: John Greene and Craig A. Rosen
TITLE OF INVENTION: Fibroblast Growth Factor-15
NUMBER OF SEQUENCES: 32

CORRESPONDENCE ADDRESS:

ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN,
STREET: 6 BECKER FARM ROAD
CITY: ROSELAND
STATE: NEW JERSEY
COUNTRY: USA
ZIP: 07068

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 INCH DISKETTE
COMPUTER: IBM PS/2
OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PERFECT 5.1

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/462,169B
FILING DATE: 05 JUN 95

CLASSIFICATION: 514

ATTORNEY/AGENT INFORMATION:

NAME: MULINS, J.G.
REGISTRATION NUMBER: 33,073
REFERENCE/DOCKET NUMBER: 325800-441 (PF203)
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-994-1700
TELEFAX: 201-994-1744

INFORMATION FOR SEQ ID NO: 10:

SEQUENCE CHARACTERISTICS:

LENGTH: 155 AMINO ACIDS
TYPE: AMINO ACID
STRANDEDNESS:
TOPOLOGY: LINEAR
MOLECULE TYPE: PROTEIN
US-08-462-169B-10

Query Match 100.0%; Score 785; DB 1; Length 155;

Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAPPPGHFKDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOAEER 60

Db 10 PALPEDGSGAPPPGHFKDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOAEER 69

QY 61 GVSINGVCANRYLAKKEDGRLLASRCVYDECFEERLESNNYTSRRKYSWYVALKR 120

Db 70 GVSINGVCANRYLAKKEDGRLLASRCVYDECFEERLESNNYTSRRKYSWYVALKR 129

QY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146

Db 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 14

US-08-867-471-10
Sequence 10, Application US/08867471
Patent No. 5872226

GENERAL INFORMATION:

APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
TITLE OF INVENTION: FACTOR-1 (FHF-1) AND METHODS OF USE
NUMBER OF SEQUENCES: 15

CORRESPONDENCE ADDRESS:

ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037

COMPUTER READABLE FORM:

MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/867,471
FILING DATE: 02-JUN-1997

CLASSIFICATION: 536

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/439,725
FILING DATE: 12-MAY-1995

ATTORNEY/AGENT INFORMATION:

NAME: Haile, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/047001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 617/678-5099

INFORMATION FOR SEQ ID NO: 10:

SEQUENCE CHARACTERISTICS:

LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-867-471-10

Query Match 100.0%; Score 785; DB 2; Length 155;

Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAPPPGHFKDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOAEER 60

Db 10 PALPEDGSGAPPPGHFKDPKRLKCKNGGFFLRHPDGRVGVREKSDPHIKLOAEER 69

QY 61 GVSINGVCANRYLAKKEDGRLLASRCVYDECFEERLESNNYTSRRKYSWYVALKR 120

Db 70 GVSINGVCANRYLAKKEDGRLLASRCVYDECFEERLESNNYTSRRKYSWYVALKR 129

QY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146

Db 130 TGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 15

US-08-438-439C-14
Sequence 14, Application US/08438439C
Patent No. 5876967

GENERAL INFORMATION:

APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
TITLE OF INVENTION: FACTOR-2 AND METHODS OF USE
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037

COMPUTER READABLE FORM:

MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/438,439C
FILING DATE: May 12, 1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Halle, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/046001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-438-439C-14

Query Match 100.0%; Score 785; DB 2; Length 155;
Best Local Similarity 100.0%; Pred. No. 1.3e-83;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 PALPEDGSGAPPGHFKDPKRLCKNGGFFLRHPDGRVDGVREKSDPHIKLQLAER 60
|||||
DB 10 PALPEDGSGAPPGHFKDPKRLCKNGGFFLRHPDGRVDGVREKSDPHIKLQLAER 69
61 GVSISIKGVCANRYLAKMKEDGRLLASKCVTDEGCFEERLESNNYNTYRSRKYTSWYVALKR 120
|||||
DB 70 GVSISIKGVCANRYLAKMKEDGRLLASKCVTDEGCFEERLESNNYNTYRSRKYTSWYVALKR 129
121 TGOYRLGSKTGPQKAILFLPMASAKS 146
|||||
DB 130 TGOYRLGSKTGPQKAILFLPMASAKS 155

Search completed: December 4, 2002, 11:13:40
Job time : 12.5 secs

GenCore version 5.1.3
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OW protein - protein search, using sw model

Run on: December 4, 2002, 11:09:48 ; Search time 7.5 Seconds
(without alignments)
316.184 Million cell updates/sec

Title: US-09-886-856-4

Perfect score: 785
Sequence: 1 PALPEGGSGAFPPGHRKDP.....GSKTGPQKALFLPMSAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 103943 seqs, 16242309 residues

Total number of hits satisfying chosen parameters: 103943

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database :

Published_Applications_AA:*

- 1: /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep.*
- 2: /cgn2_6/ptodata/1/pubpaa/PCF_NEW_PUB.pep.*
- 3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
- 4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep.*
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- 7: /cgn2_6/ptodata/1/pubpaa/PCF_US07_PUBCOMB.pep.*
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- 11: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep.*
- 12: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep.*
- 13: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep.*
- 14: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----|------------------|
| 1 | 785 | 100.0 | 146 | 9 | US-10-131-965-3 |
| 2 | 785 | 100.0 | 146 | 10 | US-09-802-365-4 |
| 3 | 785 | 100.0 | 146 | 10 | US-09-886-856-4 |
| 4 | 785 | 100.0 | 155 | 10 | US-09-823-485-5 |
| 5 | 785 | 100.0 | 155 | 10 | US-09-802-365-8 |
| 6 | 785 | 100.0 | 155 | 10 | US-09-251-263-10 |
| 7 | 785 | 100.0 | 155 | 10 | US-09-425-021-10 |
| 8 | 785 | 100.0 | 155 | 10 | US-09-886-856-8 |
| 9 | 785 | 100.0 | 155 | 10 | US-09-749-728B-7 |
| 10 | 785 | 100.0 | 158 | 10 | US-09-826-210-2 |
| 11 | 785 | 100.0 | 159 | 10 | US-09-934-706-2 |
| 12 | 785 | 100.0 | 210 | 10 | US-09-902-773A-4 |
| 13 | 785 | 100.0 | 501 | 10 | US-09-934-706-4 |
| 14 | 776 | 98.9 | 146 | 9 | US-10-131-965-5 |
| 15 | 776 | 98.9 | 146 | 10 | US-09-802-365-2 |
| 16 | 776 | 98.9 | 146 | 10 | US-09-771-302-2 |
| 17 | 776 | 98.9 | 146 | 10 | US-09-886-856-2 |
| 18 | 776 | 98.9 | 155 | 10 | US-09-802-365-6 |
| 19 | 776 | 98.9 | 155 | 10 | US-09-886-856-6 |

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|----|-------|------|-----|----|------------------|--------------------|
| 20 | 763 | 97.2 | 150 | 12 | US-10-016-447-8 | Sequence 8, Appl1 |
| 21 | 720 | 91.7 | 134 | 9 | US-09-901-938-24 | Sequence 24, Appl1 |
| 22 | 386.5 | 49.2 | 153 | 10 | US-09-822-485-4 | Sequence 4, Appl1 |
| 23 | 386 | 49.2 | 141 | 9 | US-09-929-945-7 | Sequence 7, Appl1 |
| 24 | 386 | 49.2 | 141 | 10 | US-09-929-918-7 | Sequence 8, Appl1 |
| 25 | 386 | 49.2 | 154 | 9 | US-09-929-945-8 | Sequence 2, Appl1 |
| 26 | 386 | 49.2 | 155 | 9 | US-09-929-945-2 | Sequence 9, Appl1 |
| 27 | 386 | 49.2 | 155 | 10 | US-09-284-663A-9 | Sequence 9, Appl1 |
| 28 | 386 | 49.2 | 155 | 10 | US-09-902-773A-3 | Sequence 9, Appl1 |
| 29 | 386 | 49.2 | 155 | 10 | US-09-251-263-9 | Sequence 9, Appl1 |
| 30 | 386 | 49.2 | 155 | 10 | US-09-425-021-9 | Sequence 9, Appl1 |
| 31 | 386 | 49.2 | 155 | 10 | US-09-929-918-2 | Sequence 2, Appl1 |
| 32 | 386 | 49.2 | 155 | 10 | US-09-929-918-11 | Sequence 11, Appl1 |
| 33 | 379 | 48.3 | 137 | 9 | US-09-901-938-23 | Sequence 23, Appl1 |
| 34 | 370 | 47.1 | 140 | 9 | US-10-131-965-1 | Sequence 1, Appl1 |
| 35 | 370 | 47.1 | 149 | 12 | US-10-016-447-9 | Sequence 9, Appl1 |
| 36 | 366 | 46.6 | 135 | 9 | US-09-929-945-5 | Sequence 5, Appl1 |
| 37 | 366 | 46.6 | 135 | 10 | US-09-929-918-5 | Sequence 5, Appl1 |
| 38 | 357 | 45.5 | 140 | 9 | US-10-131-965-2 | Sequence 2, Appl1 |
| 39 | 346 | 44.1 | 158 | 12 | US-10-016-447-18 | Sequence 18, Appl1 |
| 40 | 317.5 | 40.4 | 155 | 10 | US-09-425-021-24 | Sequence 24, Appl1 |
| 41 | 250.5 | 31.9 | 206 | 10 | US-09-251-263-13 | Sequence 13, Appl1 |
| 42 | 249 | 31.7 | 130 | 9 | US-09-901-938-26 | Sequence 26, Appl1 |
| 43 | 249 | 31.7 | 198 | 10 | US-09-251-263-14 | Sequence 14, Appl1 |
| 44 | 249 | 31.7 | 198 | 12 | US-10-016-447-12 | Sequence 12, Appl1 |
| 45 | 249 | 31.7 | 207 | 9 | US-10-131-965-10 | Sequence 10, Appl1 |

ALIGNMENTS

RESULT 1
US-10-131-965-3
; Sequence 3, Application US/10131965
; Patent No. US20020165160A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha J.
; APPLICANT: Kavanaugh, Michael W.
; TITLE OF INVENTION: Angiogenically Effective Unit Dose of FGF and Method of
; FILE OF INVENTION: Administering
; FILE REFERENCE: 1296/12169US05
; CURRENT APPLICATION NUMBER: US/10/131,965
; CURRENT FILING DATE: 2002-04-25
; PRIOR APPLICATION NUMBER: US/09/417,721
; PRIOR FILING DATE: 1999-10-13
; PRIOR APPLICATION NUMBER: 60/104,103
; PRIOR FILING DATE: 1998-10-13
; NUMBER OF SEQ ID NOS: 15
; SOFTWARE: Patentln Ver. 2.0
; SEQ ID NO 3
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Human FGF-2
US-10-131-965-3
Query Match 100.0%; Score 785; DB 9; Length 146;
Best Local Similarity 100.0%; Pred. No. 9.6e-75;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 PALPEGGSGAFPPGHRKDKPKRYLCKNGGFFLHPGGRVDGVRKSDPIKQLQAEER 60
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DB 1 PALPEGGSGAFPPGHRKDKPKRYLCKNGGFFLHPGGRVDGVRKSDPIKQLQAEER 60
61 GYVSIKGVCAKRYLAKEDRLASKCVPECEFFERTLESNNYTSRKRYTSMYALKR 120
|||||
DB 61 GYVSIKGVCAKRYLAKEDRLASKCVPECEFFERTLESNNYTSRKRYTSMYALKR 120
121 TGQYKLGSKTGPQKALFLPMSAKS 146
121 TGQYKLGSKTGPQKALFLPMSAKS 146
RESULT 2

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US-09-802-365-4
; Sequence 4, Application US/09802365
; Patent No. US20020032153A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment and Prevention of Erectile Dysfunction
; FILE REFERENCE: 1671.003
; CURRENT APPLICATION NUMBER: US/09/802,365
; CURRENT FILING DATE: 2001-03-09
; PRIOR APPLICATION NUMBER: 60/188,480
; PRIOR FILING DATE: 2000-03-10
; PRIOR APPLICATION NUMBER: 60/203,415
; PRIOR FILING DATE: 2000-05-11
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-802-365-4

Query Match
Best Local Similarity 100.0%; Score 785; DB 10; Length 146;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPDDGSGAAPPFGHFDPKRLCYKNGGFFLRHPDGRVDSRKSPPHILQLOAER 60
DB 1 PALPDDGSGAAPPFGHFDPKRLCYKNGGFFLRHPDGRVDSRKSPPHILQLOAER 60
OY 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

RESULT 3
US-09-886-856-4
; Sequence 4, Application US/09886856
; Patent No. US20020115603A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment of Peripheral Artery Disease
; FILE REFERENCE: PPI6090.004
; CURRENT APPLICATION NUMBER: US/09/886,856
; CURRENT FILING DATE: 2001-06-21
; PRIOR APPLICATION NUMBER: 60/213,504
; PRIOR FILING DATE: 2000-06-22
; PRIOR APPLICATION NUMBER: 60/264,572
; PRIOR FILING DATE: 2000-01-26
; PRIOR APPLICATION NUMBER: 60/276,549
; PRIOR FILING DATE: 2001-03-16
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 146
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-886-856-4

Query Match
Best Local Similarity 100.0%; Score 785; DB 10; Length 146;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 PALPDDGSGAAPPFGHFDPKRLCYKNGGFFLRHPDGRVDSRKSPPHILQLOAER 60
OY 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
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DB 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

RESULT 4
US-09-822-485-5
; Sequence 5, Application US/09822485
; Patent No. US20020001825A1
; GENERAL INFORMATION:
; APPLICANT: Itoh, No. US20020001825A1uyuki
; TITLE OF INVENTION: NO. US20020001825A1el Fibroblast Growth Factor-Like Polypeptid
; FILE REFERENCE: 08035.0001-01000
; CURRENT APPLICATION NUMBER: US/09/822,485
; CURRENT FILING DATE: 2001-04-02
; NUMBER OF SEQ ID NOS: 35
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 5
; LENGTH: 155
; TYPE: PRT
; ORGANISM: Homo sapiens
; PUBLICATION INFORMATION:
; JOURNAL: EMBO J.
; VOLUME: 5
; PAGES: 2523-2528
; DATE: 1986
US-09-822-485-5

Query Match
Best Local Similarity 100.0%; Score 785; DB 10; Length 155;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPDDGSGAAPPFGHFDPKRLCYKNGGFFLRHPDGRVDSRKSPPHILQLOAER 60
DB 10 PALPDDGSGAAPPFGHFDPKRLCYKNGGFFLRHPDGRVDSRKSPPHILQLOAER 69
OY 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 70 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 129
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 5
US-09-802-365-8
; Sequence 8, Application US/09802365
; Patent No. US20020032153A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; TITLE OF INVENTION: Treatment and Prevention of Erectile Dysfunction
; FILE REFERENCE: 1671.003
; CURRENT APPLICATION NUMBER: US/09/802,365
; CURRENT FILING DATE: 2001-03-09
; PRIOR APPLICATION NUMBER: 60/188,480
; PRIOR FILING DATE: 2000-03-10
; PRIOR APPLICATION NUMBER: 60/203,415
; PRIOR FILING DATE: 2000-05-11
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 8
; LENGTH: 155
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-802-365-8

Query Match
Best Local Similarity 100.0%; Score 785; DB 10; Length 155;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 PALPDDGSGAAPPFGHFDPKRLCYKNGGFFLRHPDGRVDSRKSPPHILQLOAER 60
OY 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 61 GVSISIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
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: APPLICANT: Sakurada, Kazuhiro
: APPLICANT: Gojo, Satoshi
: APPLICANT: Yamada, Yoji
: TITLE OF INVENTION: THE CELL HAVING THE POTENTIALITY OF DIFFERENTIATION INTO CARDIOMY
: FILE REFERENCE: 00766.000043
: CURRENT APPLICATION NUMBER: US/09/749,728B
: PRIOR FILING DATE: 2001-09-17
: PRIOR APPLICATION NUMBER: H11-372826
: PRIOR FILING DATE: 1999-12-28
: PRIOR APPLICATION NUMBER: PCT-JP00-01148
: PRIOR FILING DATE: 2000-02-28
: PRIOR APPLICATION NUMBER: PCT-JP00-07741
: PRIOR FILING DATE: 2000-11-02
: NUMBER OF SEQ ID NOS: 80
: SOFTWARE: PatentIn Ver.2.0
: SEQ ID NO 7
: LENGTH: 155
: TYPE: PRT
: ORGANISM: Homo sapiens
US-09-749-728B-7

Query Match
Best Local Similarity 100.0%; Score 785; DB 10; Length 155;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPDDGSGAAPPFGHFDPRKLYCKNGGFFLRHPDGRVDGVRKSPHIXLQDAER 60
DB 10 PALPDDGSGAAPPFGHFDPRKLYCKNGGFFLRHPDGRVDGVRKSPHIXLQDAER 69
OY 61 GVSISIKVCANRYLYAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 70 GVSISIKVCANRYLYAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 129
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 10
US-09-826-210-2
: Sequence 2, Application US/09826210
: Patent No. US20010020004A1
: GENERAL INFORMATION:
: APPLICANT: Springer, Barry A.
: APPLICANT: Pantoliano, Michael W.
: TITLE OF INVENTION: Analogs of Human Basic Fibroblast Growth Factor
: FILE REFERENCE: 1503.0220003
: CURRENT APPLICATION NUMBER: US/09/826,210
: PRIOR FILING DATE: 2001-04-05
: PRIOR APPLICATION NUMBER: US 09/220,077
: PRIOR FILING DATE: 1998-12-23
: PRIOR APPLICATION NUMBER: US 60/068,667
: PRIOR FILING DATE: 1997-12-23
: NUMBER OF SEQ ID NOS: 4
: SOFTWARE: PatentIn version 3.0
: SEQ ID NO 2
: LENGTH: 158
: TYPE: PRT
: ORGANISM: Homo sapiens
US-09-826-210-2

Query Match
Best Local Similarity 100.0%; Score 785; DB 10; Length 158;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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OY 61 GVSISIKVCANRYLYAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 73 GVSISIKVCANRYLYAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 132
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OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 133 TGQYKLGSKTGPQKAILFLPMSAKS 158

RESULT 11
US-09-934-706-2
: Sequence 2, Application US/09934706
: Patent No. US20020102709A1
: GENERAL INFORMATION:
: APPLICANT: Terumo Corporation
: TITLE OF INVENTION: Functional Hybrid Polypeptide with Collagen-binding
: FILE REFERENCE: 19990120
: CURRENT APPLICATION NUMBER: US/09/934,706
: PRIOR FILING DATE: 2001-08-23
: NUMBER OF SEQ ID NOS: 16
: SOFTWARE:
: SEQ ID NO 2
: LENGTH: 159
: TYPE: PRT
: ORGANISM: Artificial Sequence
: FEATURE:
: OTHER INFORMATION: Description of Artificial Sequence: Human Basic
: OTHER INFORMATION: Fibroblast Growth Factor with Enterokinase
: NAME/KEY: PEPTIDE
: LOCATION: (1)..(5)
: OTHER INFORMATION: /note="enterokinase recognition sequence"
: NAME/KEY: PEPTIDE
: LOCATION: (6)..(159)
: OTHER INFORMATION: /note="human fibroblast growth factor"
US-09-934-706-2

Query Match
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Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 14 PALPDDGSGAAPPFGHFDPRKLYCKNGGFFLRHPDGRVDGVRKSPHIXLQDAER 73
OY 61 GVSISIKVCANRYLYAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 74 GVSISIKVCANRYLYAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 133
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 134 TGQYKLGSKTGPQKAILFLPMSAKS 159

RESULT 12
US-09-902-773A-4
: Sequence 4, Application US/09902773A
: Patent No. US20020034787A1
: GENERAL INFORMATION:
: APPLICANT: HU, JING-SHAN
: APPLICANT: GOCAYNE, JEANNINE D.
: TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR-10
: NUMBER OF SEQUENCES: 14
: CORRESPONDENCE ADDRESSES:
: ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX
: STREET: 1100 NEW YORK AVENUE, SUITE 600
: CITY: WASHINGTON
: STATE: DC
: COUNTRY: US
: ZIP: 20005-3934
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: PatentIn Release #1.0, Version #1.30
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CURRENT APPLICATION DATA:
  APPLICATION NUMBER: US/09/902,773A
  FILING DATE: 12-Jul-2001
  CLASSIFICATION: <Unknown>
  PRIOR APPLICATION DATA:
    APPLICATION NUMBER: US/08/803,926
    FILING DATE: 21-FEB-1997
    ATTORNEY/AGENT INFORMATION:
      NAME: STEFFE, ERIC K.
      REGISTRATION NUMBER: 36,688
      REFERENCE/DOCKET NUMBER: 1488-0350001
      TELECOMMUNICATION INFORMATION:
        TELEPHONE: (202) 371-2600
        TELEFAX: (202) 371-2540
  INFORMATION FOR SEQ ID NO: 4:
    SEQUENCE CHARACTERISTICS:
      LENGTH: 210 amino acids
      TYPE: amino acid
      STRANDEDNESS: single
      TOPOLOGY: linear
    MOLECULE TYPE: protein
    SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-902-773A-4

Query Match          100.0%; Score 785; DB 10; Length 210;
Best Local Similarity 100.0%; Pred. No. 1,5e-74;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0.

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DB 65 PALPDGSGAAPPGHFKDPKRLCYCKNGGFLLRIHPDGRVDGVRKSDPHIKLOLAER 124
QY 61 GVSATKGCANRYLLMKEDGRLASCYVDECFEERLESNNTYRKRKYISWYALKR 120
DB 125 GVSATKGCANRYLLMKEDGRLASCYVDECFEERLESNNTYRKRKYISWYALKR 184
QY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146
DB 185 TGOYKLGSKTGPQKAILFLPMSAKS 210

RESULT 13
US-09-934-706-4
; Sequence 4, Application US/09934706
; Patent No. US20020102709A1
; GENERAL INFORMATION:
; APPLICANT: Terumo Corporation
; TITLE OF INVENTION: Functional Hybrid Polypeptide with Collagen-binding
; TITLE OF INVENTION: Activity
; FILE REFERENCE: 19990120
; CURRENT APPLICATION NUMBER: US/09/934,706
; CURRENT FILING DATE: 2001-08-23
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE:
; SEQ ID NO 4
; LENGTH: 501
; TYPE: PRT
; ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence:Hybrid
OTHER INFORMATION: Polypeptide of Human Fibronectin Collagen-Binding
OTHER INFORMATION: Domain and Human Basic Fibroblast Growth Factor
NAME/KEY: INIT_MET
LOCATION: (1)
NAME/KEY: DOMAIN
LOCATION: (2)..(341)
OTHER INFORMATION: /note="human fibronectin collagen-binding domain"
NAME/KEY: PEPTIDE
LOCATION: (343)..(347)
OTHER INFORMATION: /note="enterokinase recognition sequence"
NAME/KEY: PEPTIDE
LOCATION: (348)..(501)
OTHER INFORMATION: /note="human fibroblast growth factor"

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[illegible]

GenCore version 5.1.3
Copyright (c) 1993 - 2002 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: December 4, 2002, 11:09:23 ; Search time 14.5 Seconds

(without alignments)
967.974 Million cell updates/sec

Title: US-09-886-856-4

Perfect score: 785
Sequence: 1 PALPEDGSGAPPPGHFKDP.....GSKTGPCKAILFLPMSAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283224 segs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-Processing: Minimum Match 0%

Maximum Match 100%
Listing first 45 summaries

Database :

1: PIR_73:*
2: PIR1:*
3: PIR2:*
4: PIR3:*
5: PIR4:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
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| 1 | 785 | 100.0 | 210 | 2 A32398 | basic fibroblast g |
| 2 | 776 | 98.9 | 157 | 1 GKBOB | basic fibroblast g |
| 3 | 770 | 98.1 | 146 | 1 S00185 | basic fibroblast g |
| 4 | 761.5 | 97.0 | 154 | 2 A31674 | basic fibroblast g |
| 5 | 756.5 | 96.4 | 154 | 2 C37360 | basic fibroblast g |
| 6 | 738 | 94.0 | 137 | 2 A46711 | fibroblast growth |
| 7 | 723 | 92.1 | 189 | 2 A48834 | basic fibroblast g |
| 8 | 719.5 | 91.7 | 164 | 2 S31622 | basic fibroblast g |
| 9 | 646 | 82.3 | 155 | 1 A40117 | basic fibroblast g |
| 10 | 427.5 | 54.5 | 125 | 2 A32484 | basic fibroblast g |
| 11 | 396 | 50.4 | 155 | 1 A60721 | acidic fibroblast |
| 12 | 386 | 49.2 | 155 | 1 A33665 | acidic fibroblast |
| 13 | 383.5 | 48.9 | 155 | 2 A60130 | acidic fibroblast |
| 14 | 382 | 48.7 | 155 | 2 S04147 | acidic fibroblast |
| 15 | 382 | 48.7 | 155 | 2 D37360 | acidic fibroblast |
| 16 | 380 | 48.4 | 152 | 2 JH0476 | acidic fibroblast |
| 17 | 378 | 48.2 | 155 | 2 JH0055 | acidic fibroblast |
| 18 | 375 | 47.8 | 155 | 1 GKBOA | acidic fibroblast |
| 19 | 255 | 32.5 | 194 | 1 JG4627 | fibroblast growth |
| 20 | 252.5 | 32.2 | 256 | 2 JG4627 | fibroblast growth |
| 21 | 250 | 31.8 | 208 | 2 S14192 | fibroblast growth |
| 22 | 249 | 31.7 | 208 | 2 S20102 | fibroblast growth |
| 23 | 248.5 | 31.7 | 206 | 1 TVH0S | fibroblast growth |
| 24 | 248 | 31.6 | 220 | 1 I50588 | fibroblast growth |
| 25 | 245.5 | 31.3 | 206 | 2 JG4268 | fibroblast growth |
| 26 | 241.5 | 30.8 | 264 | 2 A36207 | fibroblast growth |
| 27 | 241.5 | 30.8 | 266 | 2 S68144 | embryonic fibrobla |
| 28 | 239 | 30.4 | 187 | 2 S23595 | transforming prote |
| 29 | 237.5 | 30.3 | 237 | 1 S39382 | |

| | | | | | |
|----|-------|------|-----|----------|--------------------|
| 30 | 237 | 30.2 | 245 | 1 TVMST2 | transforming prote |
| 31 | 236 | 30.1 | 239 | 1 S04742 | fibroblast growth |
| 32 | 235.5 | 30.0 | 202 | 1 TVMSHS | fibroblast growth |
| 33 | 234.5 | 29.9 | 192 | 2 S54407 | embryonic fibrobla |
| 34 | 233 | 29.7 | 267 | 1 TVH0F5 | fibroblast growth |
| 35 | 216 | 27.5 | 208 | 2 S66486 | fibroblast growth |
| 36 | 216 | 27.5 | 208 | 2 A48137 | fibroblast growth |
| 37 | 210 | 26.8 | 211 | 2 JC7353 | fibroblast growth |
| 38 | 209.5 | 26.7 | 194 | 2 I46610 | keratinocyte growt |
| 39 | 208 | 26.5 | 208 | 2 JC7082 | fibroblast somatot |
| 40 | 207.5 | 26.4 | 194 | 1 A36301 | fibroblast growth |
| 41 | 207.5 | 26.4 | 41 | 2 S26049 | fibroblast growth |
| 42 | 207.5 | 26.4 | 194 | 2 S49501 | keratinocyte growt |
| 43 | 206.5 | 26.3 | 207 | 2 JC5940 | fibroblast growth |
| 44 | 205.5 | 26.2 | 207 | 2 JC5941 | fibroblast growth |
| 45 | 204 | 26.0 | 212 | 2 JC7511 | fibroblast growth |

ALIGNMENTS

RESULT 1
A32398
basic fibroblast growth factor precursor, 22.5K form - human
N/Alternate names: bFGF, fibroblast growth factor 2; prostatic growth factor; prosta
N/Contents: basic fibroblast growth factor, 18K form
C/Species: Homo sapiens (man)
C/Date: 31-Jul-1989 #sequence-revision 31-Dec-1993 #text-change 21-Jul-2000
C/Accession: A32398; A61537; A26642; B32878; S00297; A54316; B54316; A33624; A25824;
R/Prats, H.; Kachad, M.; Prats, A.C.; Klagsbrun, M.; Lelias, J.M.; Lianzun, P.; Chal
Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1989
A/Title: High molecular mass forms of basic fibroblast growth factor are initiated b
A/Reference number: A32398; MUID:89184522; PMID:2538817
A/Accession: A32398
A/Molecule type: mRNA
A/Residues: 1-210 <PRA>
A/Cross-references: GB:004513; NID:q183083; PIDN:AA52531.1; PID:q459811
R/Shibata, F.; Baird, A.; Florjanczyk, R.Z.
Growth Factors 4, 277-287, 1991
A/Title: Functional characterization of the human basic fibroblast growth factor gen
A/Reference number: A61537; MUID:92110035; PMID:1764264
A/Accession: A61537
A/Molecule type: DNA
A/Residues: 1-114 <SHI>
A/Note: authors translated the codon GGA for residue 47 as Ala
R/Kurokawa, T.; Sasada, R.; Iwane, M.; Igarashi, K.
FEBS Lett. 213, 189-194, 1987
A/Title: Cloning and expression of cDNA encoding human basic fibroblast growth facto
A/Reference number: A26642; MUID:87162468; PMID:2435575
A/Accession: A26642
A/Molecule type: mRNA
A/Residues: 56-210 <RUR>
A/Cross-references: GB:M27968; NID:q182562; PIDN:AA52448.1; PID:q182563
R/Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Friedman, J.; Gospodarowicz, F
EMBO J. 5, 2523-2528, 1986
A/Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organiza
A/Reference number: A90924; MUID:87217066; PMID:3472745
A/Accession: B32878
A/Molecule type: mRNA
A/Residues: 56-210 <ABR>
A/Note: the authors translated the codon GAA for residue 108 as Gly
R/Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Friedman, J.; Gospodarowicz, F
EMBO J. 5, 2523-2528, 1986
A/Title: Human basic fibroblast growth factor: nucleotide sequence and genomic organ
A/Reference number: S00297; MUID:87053817; PMID:3780670
A/Accession: S00297
A/Status: not compared with conceptual translation
A/Molecule type: DNA
A/Residues: 1-155 <AB2>
A/Note: the authors translated the codon GAA for residue 108 as Gly
R/Shimoyama, Y.; Gotch, M.; Ino, Y.; Sakamoto, M.; Kato, K.; Hirohashi, S.
Jpn. J. Cancer Res. 82, 1263-1270, 1991
A/Title: Characterization of high-molecular-mass forms of basic fibroblast growth fe

rcinogenesis.
 A:Reference number: A54316; MUID:92091228; PMID:1721615
 A:Accession: A54316
 A:Molecule type: protein
 A:Residues: 'XX',86-88,'X',90-91,'X',93-95 <SH3>
 A:Note: recombinant gene expressed in *Escherichia coli*
 A:Experimental source: C-121 hepatocellular carcinoma cell line
 A:Note: sequence extracted from NCBI backbone (NCBI:71595)
 A:Accession: B54316
 A:Molecule type: protein
 A:Residues: 'XXX',19,'X',21-29 <SH2>
 A:Note: sequence extracted from NCBI backbone (NCBI:71594)
 A:RefSeq: J.J.; Bradley, J.D.; Flyburg, K.; Farris, J.; Consens, L.C.; Barr, P.J.; Baird, J. Cell Biol. 109, 3105-3114, 1989
 A:Title: Differential effects of heparin, fibronectin, and laminin on the phosphorylation
 A:Reference number: A53624; MUID:90078543; PMID:2592418
 A:Accession: A53624
 A:Status: preliminary
 A:Molecule type: protein
 A:Residues: 57-210 <PEI>
 A:Story: M.T.; Esch, F.; Shimazaki, S.; Sasse, J.; Jacobs, S.C.; Lawson, R.K.
 Biochem. Biophys. Res. Commun. 142, 702-709, 1987
 A:Title: Amino-terminal sequence of a large form of basic fibroblast growth factor isoform
 A:Reference number: A25824; MUID:87156686; PMID:2435284
 A:Accession: A25824
 A:Molecule type: protein
 A:Residues: 57-77 <STO>
 A:Experimental source: prostate
 Biochem. Biophys. Res. Commun. 135, 541-548, 1986
 A:Title: Human brain-derived acidic and basic fibroblast growth factors: amino terminal
 A:Reference number: A80122; MUID:86186784; PMID:3964259
 A:Accession: B24243
 A:Molecule type: protein
 A:Residues: 65-102,'X',104-105 <GIN>
 A:Experimental source: brain
 R.Gautschi, P.; Frater-Schroder, M.; Bohlen, P.
 FEBS Lett. 204, 203-207, 1986
 A:Title: Partial molecular characterization of endothelial cell mitogens from human brain
 A:Reference number: A91364; MUID:86275260; PMID:3732516
 A:Accession: B24301
 A:Molecule type: protein
 A:Residues: 65-88,'X',90-98,'X',100 <GAN>
 Biochem. Biophys. Res. Commun. 144, 543-550, 1987
 A:Title: A form of human basic fibroblast growth factor with an extended amino terminus.
 A:Reference number: S42242; MUID:87213238; PMID:3579930
 A:Accession: S42242
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 54-210 <SOM>
 A:Cross-references: EMBL:M17599; NID:g183086; PIDN:AAA52534.1; PID:g183087
 R.Patoliano, M.W.; Horlick, R.A.; Springer, B.A.; Van Dyk, D.E.; Tobery, T.; Wetmore, D.
 Biochemistry 33, 10229-10248, 1994
 A:Title: Multivalent ligand-receptor binding interactions in the fibroblast growth factor
 A:Reference number: A55784; MUID:94347757; PMID:7520751
 A:Accession: B55784
 A:Molecule type: protein
 A:Residues: 54-71 <PAN>
 A:Watson, R.; Anthony, F.; Pickett, M.; Lambden, P.; Masson, G.M.; Thomas, E.J.
 Biochem. Biophys. Res. Commun. 187, 1227-1231, 1992
 A:Title: Reverse transcription with nested polymerase chain reaction shows expression of
 A:Reference number: I52267; MUID:93036590; PMID:1417798
 A:Accession: I52267
 A:Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 95-182 <RES>
 A:Cross-references: GB:S47380; NID:g256535; PIDN:AD13853.1; PID:g4261553
 A:Experimental source: granulosa cells
 R.Patry, V.; Bugler, B.; Amalric, F.; Prome, J.C.; Prats, H.
 FEBS Lett. 349, 23-28, 1994
 A:Title: Purification and characterization of the 210-amino acid recombinant basic fibro-
 A:Reference number: S46253; MUID:94320639; PMID:8045296

A:Accession: S46253
 A:Molecule type: protein
 A:Residues: 39-53;65-88 <PAT>
 A:Note: recombinant gene expressed in *Escherichia coli*
 A:Genetics:
 A:Gene: GDB:FGF2; FGFB
 A:Cross-references: GDB:119910; OMIM:134920
 A:Map position: 4q25-4q27
 A:Start codon: CTG
 C:Superfamily: fibroblast growth factor
 C:Keywords: alternative initiators; angiogenesis; growth factor; heparin binding; mit
 F.1-210/Product: basic fibroblast growth factor, 22.5k form #status predicted <MA>
 F.65-210/Product: basic fibroblast growth factor, 18k form #status predicted <MA>
 F.82-86/Region: heparin binding #status predicted
 F.171-174/Region: heparin binding #status predicted
 Query Match 100.0%; Score 785; DB 2; Length 210;
 Best Local Similarity 100.0%; Pred. No. 1,66-70;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 PALPDDGGSGAPPQGFHFKDPRKLYCKNGGFRIHPDGRVDCVREKSDPHIKLOLAER 60
 DB 65 PALPDDGGSGAPPQGFHFKDPRKLYCKNGGFRIHPDGRVDCVREKSDPHIKLOLAER 124
 QY 61 GYVSTKGYCANRYLAKEDGRLASKCVTDECFPERLESNNYNTSRKRYSWYALKR 120
 DB 125 GYVSTKGYCANRYLAKEDGRLASKCVTDECFPERLESNNYNTSRKRYSWYALKR 184
 QY 121 TGYVRLGSKTGPGRKALFLPMSAKS 146
 DB 185 TGYVRLGSKTGPGRKALFLPMSAKS 210
 RESULT 2
 GKB08
 basic fibroblast growth factor precursor - bovine (fragment)
 N:Alternate names: bFGF; kidney-derived growth factor; prostatriptin
 C:Species: Bos primigenius taurus (cattle)
 C:Date: 13-Aug-1986 #sequence revision 02-Jun-1995 #text change 24-Nov-1999
 C:Accession: A24663; A32878; A61550; A61551; A60310; A60386; A60316;
 R.Abraham, J.A.; Merz, A.; Whang, J.L.; Tumolo, A.; Friedman, J.; Hjerrild, K.A.; G
 Science 233, 545-548, 1986
 A:Title: Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic
 A:Reference number: A54290; MUID:86261806; PMID:2425435
 A:Accession: A24663
 A:Molecule type: mRNA
 A:Residues: 3-157 <ABR>
 A:Cross-references: GB:M13440; NID:g163049; PIDN:AAA30518.1; PID:g163050
 A:Experimental source: pituitary gland
 R.Abraham, J.A.; Whang, J.L.; Tumolo, A.; Merz, A.; Fiddes, J.C.
 Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
 A:Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organizat
 A:Reference number: A90924; MUID:87217066; PMID:3472745
 A:Accession: A32878
 A:Molecule type: mRNA
 A:Residues: 3-157 <ABR>
 R.Milner, P.G.; Li, Y.S.; Hoffman, R.M.; Kodner, C.M.; Siegel, N.R.; Deuel, T.F.
 Biochem. Biophys. Res. Commun. 165, 1096-1103, 1989
 A:Title: A novel 17 kD heparin-binding growth factor (HBGF-8) in bovine uterus: purif
 A:Reference number: A33784; MUID:90121211; PMID:2610682
 A:Accession: A33784
 A:Molecule type: protein
 A:Residues: 1-14 <MIL>
 A:Note: demonstration of a possible alternative initiator or splice junction
 R.Bertolini, J.; Hearn, M.T.W.
 Mol. Cell. Endocrinol. 51, 187-199, 1987
 A:Title: Isolation, characterization and tissue localization of an N-terminal-truncat
 A:Reference number: A61550; MUID:87247652; PMID:3596000
 A:Accession: A61550
 A:Molecule type: protein
 A:Residues: 16-35 <BER>
 R.U. O. N.; Baird, A.; Esch, F.; Ling, N.; Guillemin, R.
 Mol. Cell. Endocrinol. 49, 189-194, 1987

A:Title: Isolation and partial characterization of basic fibroblast growth factor from h
 A:Reference number: A61551; MUID:87162836; PMID:3556734
 A:Accession: A61551
 A:Molecule type: protein
 A:Residues: 27-35, 'X', 37-41 <UE3>
 A:Experimental source: testes
 A:Note: this form appears to be identical to the renal form
 R:Ueno, N.; Baird, A.; Esch, F.; Shimasaki, S.; Ling, N.; Guillemin, R.
 Regul. Pept. 16, 135-145, 1986
 A:Title: Purification and partial characterization of a mitogenic factor from bovine lly
 A:Reference number: A60310; MUID:87119165; PMID:3809608
 A:Accession: A60310
 A:Molecule type: protein
 A:Residues: 23-35, 'X', 37-42 <UEN>
 A:Experimental source: liver
 R:Ueno, N.; Baird, A.; Esch, F.; Ling, N.; Guillemin, R.
 Biochem. Biophys. Res. Commun. 138, 580-588, 1986
 A:Title: Isolation of an amino terminal extended form of basic fibroblast growth factor.
 A:Reference number: A24819; MUID:86295737; PMID:3741423
 A:Accession: A24819
 A:Contents: annotation
 A:Note: the amino end of this form was blocked; the peptide composition matched what was
 R:Gospodarowicz, D.; Baird, A.; Cheng, J.; Lui, G.M.; Esch, F.; Bohlen, P.
 Endocrinology 118, 82-90, 1986
 A:Title: Isolation of fibroblast growth factor from bovine adrenal gland: physicochemical
 A:Reference number: A61094; MUID:86081530; PMID:3940857
 A:Accession: A61094
 A:Molecule type: protein
 A:Residues: 12-25, 27-35, 'X', 37-40 <GOS>
 A:Experimental source: adrenal gland
 R:Esch, F.; Baird, A.; Ling, N.; Ueno, N.; Hill, F.; Denoroy, L.; Klepper, R.; Gospodar
 Proc. Natl. Acad. Sci. U.S.A. 82, 6507-6511, 1985
 A:Title: Primary structure of bovine pituitary basic fibroblast growth factor (FGF) and
 A:Reference number: A01386; MUID:86016731; PMID:3863109
 A:Accession: A01386
 A:Molecule type: protein
 A:Residues: 12-157 <ESC>
 A:Experimental source: pituitary gland
 R:Baird, A.; Esch, F.; Bohlen, P.; Ling, N.; Gospodarowicz, D.
 Regul. Pept. 12, 201-213, 1985
 A:Title: Isolation and partial characterization of an endothelial cell growth factor frd
 A:Reference number: A60316; MUID:86095426; PMID:4081126
 A:Accession: A60316
 A:Molecule type: protein
 A:Residues: 27-35, 'X', 37-43 <BAI>
 A:Experimental source: kidney
 R:Bohlen, P.; Baird, A.; Esch, F.; Ling, N.; Gospodarowicz, D.
 Proc. Natl. Acad. Sci. U.S.A. 81, 5364-5368, 1984
 A:Title: Isolation and partial molecular characterization of pituitary fibroblast growth
 A:Reference number: A22054; MUID:84298139; PMID:6591194
 A:Accession: A22054
 A:Molecule type: protein
 A:Residues: 12-26 <BOH>
 C:Comment: The acidic and basic fibroblast growth factors are the major endothelial-cell
 all types in vitro (although bFGF is 30-100 times more potent than aFGF in stimulating t
 C:Comment: This protein binds heparin more strongly than aFGF.
 C:Superfamily: fibroblast growth factor
 C:Keywords: alternative splicing; angiogenesis; blocked amino end; growth factor; hepari
 F:1-157/Product: basic fibroblast growth factor, uterine form #status predicted <MAT1>
 F:4-157/Product: basic fibroblast growth factor, pituitary gamma form #status experiment
 F:12-157/Product: basic fibroblast growth factor, pituitary alpha form #status experiment
 F:16-157/Product: basic fibroblast growth factor, pituitary short form #status predicted
 F:23-157/Product: basic fibroblast growth factor, hepatic form #status experimental <MAT
 F:27-157/Product: basic fibroblast growth factor, renal form #status experimental <MAT6>
 F:29-33, 118-121/Region: heparin binding #status predicted
 F:4/Modified site: blocked amino end (Ala) (in mature form pituitary gamma) (probably ac

Query Match 98.9%; Score 776; DB 1; Length 157;
 Best Local Similarity 98.6%; Pred. No. 8.8e-70;
 Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

1 PALPDDGGGAPPPGPHFDPKRLCKNGGFFLRHPDDGVDDGVREKSDPHIKLQDAER 60
 12 PALPDDGGGAPPPGPHFDPKRLCKNGGFFLRHPDDGVDDGVREKSDPHIKLQDAER 71

61 GVASTKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKRTTSWVALKR 120
 72 GVASTKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKRTTSWVALKR 131
 121 TGOYKLGSPKTPGOKAIFLPLMSAKS 146
 132 TGOYKLGSPKTPGOKAIFLPLMSAKS 157

RESULT 3
 S00185
 basic fibroblast growth factor - sheep
 N:Alternate names: prostatiotin
 C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
 C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
 C:Accession: S00185
 R:Simpson, R.J.; Moritz, R.L.; Lloyd, C.J.; Fabrl, L.J.; Nice, E.C.; Rubire, M.R.; Bu
 FEBS Lett. 224, 128-132, 1987
 A:Title: Primary structure of ovine pituitary basic fibroblast growth factor.
 A:Reference number: S00185; MUID:88055577; PMID:3678486
 A:Accession: S00185
 A:Molecule type: protein
 A:Residues: 1-146 <STM>
 C:Superfamily: fibroblast growth factor
 C:Keywords: growth factor; heparin binding; mitogen
 F:18-22/Region: heparin binding #status predicted
 F:107-110/Region: heparin binding #status predicted

Query Match 98.1%; Score 770; DB 1; Length 146;
 Best Local Similarity 97.9%; Pred. No. 3.2e-69;
 Matches 143; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

1 PALPDDGGGAPPPGPHFDPKRLCKNGGFFLRHPDDGVDDGVREKSDPHIKLQDAER 60
 1 PALPDDGGGAPPPGPHFDPKRLCKNGGFFLRHPDDGVDDGVREKSDPHIKLQDAER 60

61 GVASTKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKRTTSWVALKR 120
 61 GVASTKGVCANRYLAMKEDGRLASKCVTDCEFFERLESNNYNTYRSKRTTSWVALKR 120

121 TGOYKLGSPKTPGOKAIFLPLMSAKS 146
 121 TGOYKLGSPKTPGOKAIFLPLMSAKS 146

RESULT 4
 A31674
 basic fibroblast growth factor precursor - rat
 N:Alternate names: bFGF
 C:Species: Rattus norvegicus (Norway rat)
 C:Date: 21-May-1990 #sequence_revision 21-May-1990 #text_change 16-Jul-1999
 C:Accession: A31674; S00876; S24309
 R:Shimasaki, S.; Emoto, N.; Koba, A.; Mercado, M.; Shibata, F.; Cooksey, K.; Baird, P.
 Biochem. Biophys. Res. Commun. 157, 256-263, 1988
 A:Title: Complementary DNA cloning and sequencing of rat ovarian basic fibroblast grc
 A:Reference number: A31674; MUID:89061721; PMID:3196337
 A:Accession: A31674
 A:Molecule type: mRNA
 A:Residues: 1-154 <SHI>
 A:Cross-references: GB:M2427; NID:9204285; PIDN:AAA41210.1; PID:9204286
 R:Kurokawa, T.; Sano, M.; Igarashi, K.
 Nucleic Acids Res. 16, 5201, 1988
 A:Title: Nucleotide sequence of rat basic fibroblast growth factor cDNA.
 A:Reference number: S00876; MUID:88262516; PMID:3387229
 A:Accession: S00876
 A:Molecule type: mRNA
 A:Residues: 1-154 <KUR>
 A:Cross-references: EMBL:X07285; NID:956203; PIDN:CAA30265.1; PID:956204
 R:El-Husseini, A.E.D.; Paterson, J.A.; Myal, Y.; Shiu, R.P.C.
 Biochem. Biophys. Acta 1131, 314-316, 1992
 A:Title: PCR detection of the rat brain basic fibroblast growth factor (bFGF) mRNA cc
 A:Reference number: S24309; MUID:92329546; PMID:1378302

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A:Molecule type: mRNA
A:Residues: 1-137 <MIN>
A:Cross-references: GB:LI2034; NID:g165014; PIDN:AAA31248.1; PID:g165015
C:Superfamily: fibroblast growth factor

Query Match          94.0%; Score 738; DB 2; Length 137;
Best Local Similarity 99.3%; Pred. No. 4,5e-66;
Matches 136; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPDGSSGAFPPGHEFDPKRLCYCKNGGFEFLRIHPDGRVDGVREKSDPHIKLOLAEEER 60
Db 1 PALPDGSSGAFPPGHEFDPKRLCYCKNGGFEFLRIHPDGRVDGVREKSDPHIKLOLAEEER 60
OY 61 GVSATKGCANRYLAKMKEDGRLLASKCVTDCEFFERLESNNYTSRKYTSWYVALKR 120
Db 61 GVSATKGCANRYLAKMKEDGRLLASKCVTDCEFFERLESNNYTSRKYTSWYVALKR 120
OY 121 TGOYKLGSKTGPQKAI 137
Db 121 TGOYKLGSKTGPQKAI 137

RESULT 7
A48834
Basic fibroblast growth factor - chicken
C:Species: Gallus gallus (chicken)
C:Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 16-Jul-1995
C:Accession: A48834; S23636
R:Botja, A.Z.; Meijers, C.; Zeller, R.
Dev. Biol. 157, 110-118, 1993
A:Title: Expression of alternatively spliced bfgf first coding exons and antisense mr
A:Reference number: A48834; MUID:93246053; PMID:7683281
A:Accession: A48834
A:Status: preliminary
A:Molecule type: nucleic acid
A:Residues: 1-189 <BOR>
A:Experimental source: embryo
A:Note: sequence extracted from NCBI backbone (NCBIN:131000, NCBIPI:131001)
R:Mirzani, E.; Gruenbaum, Y.; Shohat, H.; Ziv, T.
Development 109, 387-393, 1990
A:Title: Fibroblast growth factor during mesoderm induction in the early chick embryo
A:Reference number: S23636; MUID:90382254; PMID:2401202
A:Accession: S23636
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 95-128 <MIT>
A:Cross-references: EMBL:X56804; NID:g62855; PIDN:CAA40139.1; PID:g62856
C:Superfamily: fibroblast growth factor

Query Match          92.1%; Score 723; DB 2; Length 189;
Best Local Similarity 91.8%; Pred. No. 2e-64;
Matches 134; Conservative 5; Mismatches 7; Indels 0; Gaps 0;

OY 1 PALPDGSSGAFPPGHEFDPKRLCYCKNGGFEFLRIHPDGRVDGVREKSDPHIKLOLAEEER 60
Db 1 PALPDGSSGAFPPGHEFDPKRLCYCKNGGFEFLRIHPDGRVDGVREKSDPHIKLOLAEEER 103
OY 61 GVSATKGCANRYLAKMKEDGRLLASKCVTDCEFFERLESNNYTSRKYTSWYVALKR 120
Db 104 GVSATKGCANRYLAKMKEDGRLLASKCVTDCEFFERLESNNYTSRKYTSWYVALKR 163
OY 121 TGOYKLGSKTGPQKAI 137
Db 121 TGOYKLGSKTGPQKAI 137

RESULT 8
S31672
Basic fibroblast growth factor - short-tailed opossum (Monodelphis domestica) (fragme
C:SI : 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 12-Apr-1995
C:Accession: S31622
R:Ku ewitt, D.F.; Saboulin, C.L.K.; Budge, C.L.; Ley, R.D.

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submitted to the EMBL Data Library, September 1992

A:Description: Characterization of cDNA encoding basic fibroblast growth factor of the m

A:Reference number: S31622

A:Accession: S31622

A:Status: preliminary

A:Molecule type: DNA

A:Residues: 1-164 <KUS>

A:Cross-References: EMBL:215154

C:Superfamily: fibroblast growth factor

Query Match 91.7% Score 719.5; DB 2; Length 164;

Best Local Similarity 92.5%; Pred. No. 3.8e-64;

Matches 136; Conservative 5; Mismatches 5; Indels 1; Gaps 1;

QY 1 PALPED-GSGAAPPFGHFDPRKRLCKNGGFFLRHPDGRVDGVRKSDPHIKLOQAE 59

DB 18 PALSGGGGGGAGAPPFGHFDPRKRLCKNGGFFLRHPDGRVDGIRKSDPHIKLOQAE 77

QY 60 RGVVSIKGCANRYLAKMEDGLLASKCYTDECFEERLESNNYNTYRSKRTSWYALK 119

DB 78 RGVVSIKGCANRYLAKMEDGLLALKYVEECFFERLESNNYNTYRSKRTSWYALK 137

QY 120 RTGOYKLGSKTGPGOKAILFLPMSAKS 146

DB 138 RTGOYKLGSKTGPGOKAILFLPMSAKS 164

RESULT 9

A:Accession: A40117

A:Title: basic fibroblast growth factor - African clawed frog

C:Species: Xenopus laevis (African clawed frog)

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999

C:Accession: A40117; A29618

R:Klimelman, D.; Abrahams, J.A.; Haaparanta, T.; Palist, T.M.; Kirschner, M.W.

Science 242, 1053-1056, 1988

A:Title: The presence of fibroblast growth factor in the frog egg: its role as a natural

A:Reference number: A40117; MUID:89058621; PMID:3194757

A:Accession: A40117

A:Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-155 <KIM>

A:Cross-References: GB:M18067; NID:g214177; PIDN:AAA49726.1; PID:g214178; GB:M21092

R:Klimelman, D.; Kirschner, M.

Cell 51, 869-877, 1987

A:Title: Synergistic induction of mesoderm by FGF and TGF-beta and the identification of

A:Reference number: A29618; MUID:88052890; PMID:3479265

A:Accession: A29618

A:Molecule type: mRNA

A:Residues: 95-110,112-155 <KIT>

C:Superfamily: fibroblast growth factor

C:Keywords: growth factor

Query Match 82.3% Score 646; DB 1; Length 155;

Best Local Similarity 82.9%; Pred. No. 7.1e-57;

Matches 121; Conservative 9; Mismatches 16; Indels 0; Gaps 0;

QY 1 PALPEDGSGAAPPFGHFDPRKRLCKNGGFFLRHPDGRVDGVRKSDPHIKLOQAE 60

DB 10 PTESEDDGNPFSPGSPFDRKRLCKNGGFFLRINSDDRVGSRDKSDSHIKLOQAE 69

QY 61 GVVSIKGCANRYLAKMEDGLLASKCYTDECFEERLESNNYNTYRSKRTSWYALK 120

DB 70 GVVSIKGCANRYLAKMEDGLLASKCYTDECFEERLESNNYNTYRSKRTSWYALK 129

QY 121 TGQYKLGSKTGPGOKAILFLPMSAKS 146

DB 130 TGQYKLGSKTGPGOKAILFLPMSAKS 155

RESULT 10

A:Accession: A32484

A:Title: basic fibroblast growth factor precursor, 25k - guinea pig (fragments)

C:Species: Cavia porcellus (guinea pig)

C:Date: 20-Oct-1989 #sequence_revision 20-Oct-1989 #text_change 15-Jun-1996

C:Accession: A32484

R:Sommer, A.; Moscatelli, D.; Rifkin, D.B.

Biochem. Biophys. Res. Commun. 160, 1267-1274, 1989

A:Title: An amino-terminal extended and post-translationally modified form of a 25

A:Reference number: A32484; MUID:89273588; PMID:2730645

A:Accession: A32484

A:Status: preliminary; nucleic acid sequence not shown; not compared with conceptual

A:Molecule type: mRNA

A:Residues: 1-125 <SOM>

C:Superfamily: fibroblast growth factor

Query Match 54.5% Score 427.5; DB 2; Length 125;

Best Local Similarity 61.0%; Pred. No. 2.8e-35;

Matches 89; Conservative 2; Mismatches 4; Indels 51; Gaps 3;

QY 1 PALPEDGSGAAPPFGHFDPRKRLCKNGGFFLRHPDGRVDGVRKSDPHIKLOQAE 60

DB 31 PALPEGDGAFAFGHFDPRKRLCKNGGFFLRHPDGRVDGVRKSDPHIKLOQAE 65

QY 61 GVVSIKGCANRYLAKMEDGLLASKCYTDECFEERLESNNYNTYRSKRTSWYALK 120

DB 66 -----CYTDECFEERLESNNYNTYRSKRTSWYALK 99

QY 121 TGQYKLGSKTGPGOKAILFLPMSAKS 146

DB 100 TGQYKLGSKTGPGOKAILFLPMSAKS 125

RESULT 11

A:Accession: A60721

A:Title: acidic fibroblast growth factor - golden hamster

C:Species: Mesocricetus auratus (golden hamster)

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999

C:Accession: A60721

R:Hall, J.A.; Harris, M.A.; Malark, M.; Mansson, P.E.; Zhou, H.; Harris, S.E.

J. Cell. Biochem. 43, 17-26, 1990

A:Title: Characterization of the hamster DDT-1 cell afGF/HGBF-1 gene and cDNA and it

A:Reference number: A60721; MUID:90270291; PMID:1693366

A:Accession: A60721

A:Status: not compared with conceptual translation

A:Molecule type: DNA

A:Residues: 1-155 <HAL>

C:Superfamily: fibroblast growth factor

C:Keywords: growth factor; heparin binding

Query Match 50.4% Score 396; DB 1; Length 155;

Best Local Similarity 56.6%; Pred. No. 4.8e-32;

Matches 77; Conservative 16; Mismatches 41; Indels 2; Gaps 1;

QY 13 PGHFDKPRKRLCKNGGFFLRHPDGRVDGVRKSDPHIKLOQAEGRVYSIKVCANR 72

DB 19 PPGNYKKPRKRLCKNGGFFLRHPDGRVDGVRKSDPHIKLOQAEGRVYSIKVCANR 78

QY 73 YLAKMEDGRLASKCYTDECFEERLESNNYNTYRSKRTSWYALKRGTGYSKT 130

DB 79 YLAKMEDGRLASKCYTDECFEERLESNNYNTYRSKRTSWYALKRGTGYSKT 138

QY 131 GPGOKAILFLPMSAKS 146

DB 139 HYGOKAILFLPMSAKS 154

RESULT 12

A:Accession: A33665

A:Title: acidic fibroblast growth factor 1 precursor [validated] - human

N:Alternate names: beta-ECGF; endothelial cell growth factor beta; heparin-binding g

C:Species: Homo sapiens (man)

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 08-Dec-2000

C:Accession: A33665; S18217; A43804; A24662; JH0707; S35535; S35536; I39413;

R:Merz, A.; Fischer, E.; Graves, D.; Tumolo, A.; Miller, J.; Gospodarowicz, D.; Ab

Biochem. Biophys. Res. Commun. 164, 1121-1129, 1989

A:Title: Structural analysis of the gene for human acidic fibroblast growth factor.
A:Reference number: A33665; MUID:90073637; PMID:2590193
A:Accession: A33665
A:Molecule type: DNA
A:Residues: 1-155 <MER>
A:Cross-references: GB:M30491
R:Wang, W.P.; Lehtoma, K.; Varban, M.L.; Krishnan, I.; Chlu, I.M.
Mol. Cell. Biol. 9, 2387-2395, 1989
A:Title: Cloning of the gene coding for human class 1 heparin-binding growth factor and
A:Reference number: A32316; MUID:89343957; PMID:2474753
A:Accession: A32316
A:Molecule type: DNA
A:Residues: 1-155 <MAN>
A:Cross-references: GB:M23087; NID:g183875; PIDN:AA52638.1; PID:g386768
R:Wang, W.P.; Quick, D.; Balcerzak, S.P.; Needleman, S.W.; Chlu, I.M.
Oncogene 6, 1521-1529, 1991
A:Title: Cloning and sequence analysis of the human acidic fibroblast growth factor gene
A:Reference number: S18217; MUID:92019819; PMID:1717925
A:Accession: S18217
A:Molecule type: DNA
A:Residues: 1-155 <MA2>
A:Cross-references: EMBL:M23086
R:Chlu, I.M.; Wang, W.P.; Lehtoma, K.
Oncogene 5, 755-762, 1990
A:Title: Alternative splicing generates two forms of mRNA coding for human heparin-binding
A:Reference number: A43804; MUID:90265618; PMID:1693186
A:Accession: A43804
A:Molecule type: mRNA
A:Residues: 1-155 <CH1>
A:Cross-references: EMBL:X51943; NID:g32435; PIDN:CAA36206.1; PID:g32436
R:Jaye, M.; Hawk, R.; Burgess, W.; Ricca, G.A.; Chlu, I.M.; Navera, M.W.; O'Brien, S.J.
Science 233, 541-545, 1986
A:Title: Human endothelial cell growth factor: cloning, nucleotide sequence, and chromosomal
A:Reference number: A24662; MUID:86261805; PMID:3523756
A:Accession: A24662
A:Molecule type: mRNA
A:Residues: 1-155 <RAY>
A:Cross-references: GB:M13361; NID:g181941; PIDN:AAA79245.1; PID:g181942
R:Yu, Y.L.; Kna, H.; Golden, J.A.; Mighelsen, A.A.J.; Goetzl, E.J.; Turck, C.W.
J. Exp. Med. 175, 1073-1080, 1992
A:Title: An acidic fibroblast growth factor protein generated by alternate splicing acts
A:Reference number: JH0707; MUID:92202857; PMID:1372643
A:Accession: JH0707
A:Molecule type: mRNA
A:Residues: 1-155 <GVY>
A:Cross-references: GB:X65778; NID:g396163; PIDN:CAA6661.1; PID:g396164
R:Payson, R.A.; Canahan, H.; Chotani, M.A.; Wang, W.P.; Harris, S.E.; Myers, R.L.; Chlu,
Nucleic Acids Res. 21, 489-495, 1993
A:Title: Cloning of two novel forms of human acidic fibroblast growth factor (afGF) mRNA
A:Reference number: S35535; MUID:93181239; PMID:7680120
A:Accession: S35535
A:Status: translation not shown
A:Molecule type: mRNA
A:Residues: 1-58 <PAV>
A:Cross-references: GB:L01485
A:Accession: S35536
A:Status: translation not shown
A:Molecule type: mRNA
A:Residues: 1-58 <PA2>
A:Cross-references: GB:L01487
R:Crumley, G.; Dionne, C.A.; Jaye, M.
Biochem. Biophys. Res. Commun. 171, 7-13, 1990
A:Title: The gene for human acidic fibroblast growth factor encodes two upstream exons and
A:Reference number: I39412; MUID:90365758; PMID:2393407
A:Accession: I39412
A:Status: translation not shown
A:Molecule type: mRNA
A:Residues: 1-40 <RES>
A:Cross-references: GB:M60515; NID:g178226; PIDN:AAA51672.1; PID:g553170; GB:M60516; NID:
R:Harper, J.W.; Striyom, D.J.; Lobb, R.R.
Biochemistry 25, 4097-4103, 1986
A:Reference number: A23553; MUID:86296647; PMID:2427112
A:Accession: A23553

```

A:Molecule type: protein
A:Residues: 16-155 <HAR>
R:Gimenez-Gallego, G.; Conn, C.; Hatcher, V.B.; Thomas, K.A.
Biochem. Biophys. Res. Commun. 138, 611-617, 1986
A>Title: The complete amino acid sequence of human brain-derived acidic fibroblast gr
A:Reference number: A24820; MUID:86295741; PMID:3527167
A:Accession: A24820
A:Molecule type: protein
A:Residues: 16-155 <GIT>
R:Gimenez-Gallego, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
Biochem. Biophys. Res. Commun. 135, 541-548, 1986
A>Title: Human brain-derived acidic and basic fibroblast growth factors: amino termin
A:Reference number: A90122; MUID:86186784; PMID:3964259
A:Accession: A24243
A:Molecule type: protein
A:Residues: 16-47 <GI2>
A:Experimental source: Brain
R:Gauteschl, P.; Frazer-Schroder, M.; Bohlen, P.
FEBS Lett. 204, 203-207, 1986
A>Title: Partial molecular characterization of endothelial cell mitogens from human b
A:Reference number: A91364; MUID:86275260; PMID:3732516
A:Accession: A24301
A:Molecule type: protein
A:Residues: 16-30,'X','32-49 <GAU>
R:Gauteschl-Sova, P.; Muller, T.; Bohlen, P.
Biochem. Biophys. Res. Commun. 140, 874-880, 1986
A>Title: Amino acid sequence of human acidic fibroblast growth factor.
A:Reference number: A26386; MUID:87048871; PMID:3778488
A:Accession: A26386
A:Molecule type: protein
A:Residues: 16-155 <GA2>
A:Experimental source: Brain
R:Chavan, A.J.; Haley, B.E.; Volklin, D.B.; Marfia, K.E.; Verticelli, A.M.; Bruner, M.
Biochemistry 33, 7193-7202, 1994
A>Title: Interaction of nucleotides with acidic fibroblast growth factor (FGF-1).
A:Reference number: A53639; MUID:94271773; PMID:7516183
A:Accession: A53639
A:Molecule type: protein
A:Residues: 16-30,'X','32-38;73-75,'X','77-97,'X','99-101;128-131,'X','133-140,'X','142-15
C:Genetics:
A:Gene: GDB:FGF1; FGFA
A:Cross-references: GDB:119909; OMIM:131220
A:Map position: 5q31.3-5q33.2
A:Introns: 57/1; 91/3
C:Superfamily: fibroblast growth factor
C:Keywords: alternative splicing; growth factor; heparin binding
E:16-155/Product: fibroblast growth factor 1 #status experimental <MAT>
E:112/Binding site: carbohydrate (asn) (covalent) #status absent
Query Match          49.2%; Score 386; DB 1; Length 155;
Best Local Similarity 55.9%; Pred.No.4.7e-31;
Matches 76; Conservative 16; Mismatches 42; Indels 2; Gaps 1;
QY      13 PPGRHKDKRKRLCKNGGFRLRHDPGRDVGAREKSDPHIKLOLAEEGVYSIRKVCANR 72
        |||...|||...|||...|||...|||...|||...|||...|||...|||...|||...
Db       19 PGNKRRKRLLYCNSGGHFLRIIPGTVDGTRDSDOHQLOLSAEVGEVYSTETGQ 78
QY      73 YLAKMEDGLASKCVTCECFERLESNNVTYSRRYT--SVTVALKRTGYRYLGSKT 130
        |||...|||...|||...|||...|||...|||...|||...|||...|||...|||...
Db       79 YLAMTDGLIYSQTPENECLFLERLEENHNITYISKRAEKMEVGLKKNGSCRGPRPT 138
QY      131 GPGRKAIFLPMSAKS 146
        |||||||||...|
Db       139 HYGCRAILFLPLPVSS 154

RESULT 13
A60130
acid: fibroblast growth factor - chicken
N:A1 crate names: endothelial cell growth factor
C:SP les: Gallus gallus (chicken)
C:Da : 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 16-Jul-1999
C:Cn assion: A60130; S02639
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R:Schmuerch, H.; Risa, W.
 Development 111, 1143-1154, 1991
 A:Title: Differentiating and mature neurons express the acidic fibroblast growth factor
 C:Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
 C:Accession: A60130; MUID:91347925; PMID:11715259
 A:Accession: A60130
 A>Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-155 <SCH>
 A:Cross-references: GB:563263; NID:g234372; PIDN:AA19629.1; PID:g234373
 R:Risa, W.; Gautschi-Sova, P.; Boehlen, P.
 EMBO J. 7, 959-962, 1988
 A:Title: Endothelial cell growth factors in embryonic and adult chick brain are related
 A:Reference number: 502639; MUID:88296430; PMID:3402441
 A:Accession: 502639
 A:Molecule type: protein
 A:Residues: 22-30, 'X', '32-44', 'X', '46-48 <RIS>
 C:Superfamily: fibroblast growth factor
 C:Keywords: growth factor

Query Match 48.9%; Score 383.5; DB 2; Length 155;
 Best Local Similarity 54.5%; Pred. No. 8.4e-31;
 Matches 78; Conservative 20; Mismatches 40; Indels 5; Gaps 2;

QY 2 ALPDGSGAPPPGHPDPKRLCYKNGGFLRHPDGRVDGVREKSDPHIKLOLAERG 61
 DB 11 ALTRFPG--LPLGNYPKRLCYKNGGFLRHPDGRVDGRSDPHIKLOLAERG 67
 QY 62 VSIKGVCANRYLAMKEDRLASKCVDECFEERLESNNYNTYRSRYT--SWYVALK 119
 DB 68 EYIKSRASGOYLAMDINGILYGSOLPGECEFLERLENNHYNTYISKHAKNMFVGLK 127
 QY 120 RTGQYKLGSKTGPQKAILFLPM 142
 DB 128 KNGSKLGPFRHYGQKAILFLPL 150

RESULT 14

acidic fibroblast growth factor 1 - rat
 N:Alternate names: heparin-binding growth factor 1
 C:Species: Rattus norvegicus (Norway rat)
 C:Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 16-Jul-1999
 C:Accession: S04147
 R:Goodrich, S.P.; Yan, G.C.; Bahrenburg, K.; Mansson, P.E.
 Nucleic Acids Res. 17, 2867, 1989
 A:Title: The nucleotide sequence of rat heparin binding growth factor 1 (HBGF-1).
 A:Reference number: S04147; MUID:89240051; PMID:2470023
 A:Accession: S04147
 A:Molecule type: mRNA
 A:Residues: 1-155 <GOO>
 A:Cross-references: EMBL:X14232; NID:g56351; PIDN:CA32448.1; PID:g56352
 C:Superfamily: fibroblast growth factor
 C:Keywords: growth factor; heparin binding

Query Match 48.7%; Score 382; DB 2; Length 155;
 Best Local Similarity 55.1%; Pred. No. 1.2e-30;
 Matches 75; Conservative 17; Mismatches 42; Indels 2; Gaps 1;

QY 13 PGHFKDPKRLCYKNGGFLRHPDGRVDGVREKSDPHIKLOLAERGVSIRKVCANR 72
 DB 19 PLGNKRRKRLCYKNGGFLRHPDGRVDGRSDPHIKLOLAERGVSIRKVGCTG 78
 QY 73 YLAKEDGRLASKCVDECFEERLESNNYNTYRSRYT--SWYVALKRTGQYKLGSKT 130
 DB 79 YLAMDTEGLVGSQTPNECEFLERLENNHYNTYISKHAKNMFVGLKKNKSCRGPR 138
 QY 131 GPGQKAILFLPM 146
 DB 139 HYGQKAILFLPLPVSS 154

RESULT 15
 D37360

acidic fibroblast growth factor - mouse
 N:Alternate names: aFGF; FGF-1
 C:Species: Mus musculus (house mouse)
 C:Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
 C:Accession: D37360; J05231
 R:Hebert, J.M.; Basillio, C.; Goldfarb, M.; Haub, O.; Martin, G.R.
 Dev. Biol. 138, 454-463, 1990
 A:Title: Isolation of cDNAs encoding four mouse FGF family members and characterization
 A:Reference number: A37360; MUID:90201563; PMID:2318343
 A:Accession: D37360
 A>Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-155 <HRB>
 A:Cross-references: GB:M30641; NID:g193284; PIDN:AAA37618.1; PID:g309236
 R:Madal, F.; Hackshaw, K.V.; Chiu, I.M.
 Gene 179, 231-236, 1996
 A:Title: Cloning and characterization of the mouse Fgf-1 gene.
 A:Reference number: J05231; MUID:97128312; PMID:8972905
 A:Accession: J05231
 A>Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-155 <MAD>
 A:Cross-references: GB:U36456
 C:Comment: This protein is an inducer of neovascularization in angiogenic disease loc
 C:Genetics:
 A:Gene: Fgf-1
 A:Introns: 57/1; 91/3
 C:Superfamily: fibroblast growth factor

Query Match 48.7%; Score 382; DB 2; Length 155;
 Best Local Similarity 55.1%; Pred. No. 1.2e-30;
 Matches 75; Conservative 17; Mismatches 42; Indels 2; Gaps 1;

QY 13 PGHFKDPKRLCYKNGGFLRHPDGRVDGVREKSDPHIKLOLAERGVSIRKVCANR 72
 DB 19 PLGNKRRKRLCYKNGGFLRHPDGRVDGRSDPHIKLOLAERGVSIRKVGCTG 78
 QY 73 YLAKEDGRLASKCVDECFEERLESNNYNTYRSRYT--SWYVALKRTGQYKLGSKT 130
 DB 79 YLAMDTEGLVGSQTPNECEFLERLENNHYNTYISKHAKNMFVGLKKNKSCRGPR 138
 QY 131 GPGQKAILFLPM 146
 DB 139 HYGQKAILFLPLPVSS 154

Search completed: December 4, 2002, 11:12:48
 Job time: 15.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:06:33 ; Search time 8.5 Seconds

(without alignments)
712.417 Million cell updates/sec

Title: US-09-886-856-4

Perfect score: 785
Sequence: 1 PALPDDGSGAFPPGHFKDP.....GSKTPGQKALFLPMSAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 112892 segs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Database: SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----|-------------|
| 1 | 785 | 100.0 | 155 | 1 | FGF2_HUMAN |
| 2 | 776 | 98.9 | 155 | 1 | FGF2_BOVIN |
| 3 | 770 | 98.1 | 155 | 1 | FGF2_SHEEP |
| 4 | 761.5 | 97.0 | 154 | 1 | FGF2_RAT |
| 5 | 756.5 | 96.4 | 154 | 1 | FGF2_MOUSE |
| 6 | 738 | 94.0 | 137 | 1 | FGF2_RABIT |
| 7 | 723 | 92.1 | 158 | 1 | FGF2_CHICK |
| 8 | 719.5 | 91.7 | 156 | 1 | FGF2_MONDO |
| 9 | 646 | 82.3 | 155 | 1 | FGF2_XENTLA |
| 10 | 396 | 50.4 | 155 | 1 | FGF1_MESAU |
| 11 | 386 | 49.2 | 155 | 1 | FGF1_HUMAN |
| 12 | 383.5 | 48.9 | 155 | 1 | FGF1_CHICK |
| 13 | 382 | 48.7 | 155 | 1 | FGF1_MOUSE |
| 14 | 380 | 48.4 | 152 | 1 | FGF1_PIG |
| 15 | 375 | 47.8 | 155 | 1 | FGF1_BOVIN |
| 16 | 255 | 32.5 | 194 | 1 | FGF4_CHICK |
| 17 | 252.5 | 32.2 | 256 | 1 | FGF6_BRARE |
| 18 | 250 | 31.8 | 208 | 1 | FGF6_MOUSE |
| 19 | 249 | 31.7 | 208 | 1 | FGF6_HUMAN |
| 20 | 248.5 | 31.7 | 206 | 1 | FGF4_HUMAN |
| 21 | 248 | 31.6 | 220 | 1 | FGF3_CHICK |
| 22 | 246.5 | 31.4 | 206 | 1 | FGF4_BOVIN |
| 23 | 241.5 | 30.8 | 264 | 1 | FGF5_MOUSE |
| 24 | 241.5 | 30.8 | 266 | 1 | FGF5_RAT |
| 25 | 239 | 30.4 | 187 | 1 | FGF4_XENTLA |
| 26 | 237.5 | 30.3 | 237 | 1 | FGF3_XENTLA |
| 27 | 237 | 30.2 | 245 | 1 | FGF3_MOUSE |
| 28 | 236 | 30.0 | 239 | 1 | FGF3_HUMAN |
| 29 | 235.5 | 29.9 | 202 | 1 | FGF4_MOUSE |
| 30 | 234.5 | 29.9 | 192 | 1 | FGF4_XENTLA |
| 31 | 233 | 29.7 | 260 | 1 | FGF5_HUMAN |
| 32 | 216 | 27.5 | 208 | 1 | FGF5_HUMAN |
| 33 | 216 | 27.5 | 208 | 1 | FGF9_MOUSE |

| | | | | | | |
|----|-------|------|-----|---|-------------|--------------------|
| 34 | 216 | 27.5 | 208 | 1 | FGF9_RAT | P36364 rattus norv |
| 35 | 212.5 | 27.1 | 209 | 1 | FGF9_XENTLA | O91875 xenopus lae |
| 36 | 210.5 | 26.8 | 194 | 1 | FGF7_CANFA | P79150 canis famli |
| 37 | 210 | 26.8 | 211 | 1 | FGF8_HUMAN | O9np95 homo sapien |
| 38 | 209.5 | 26.7 | 194 | 1 | FGF7_MOUSE | P36363 mus musculu |
| 39 | 207.5 | 26.4 | 194 | 1 | FGF7_HUMAN | P21781 homo sapien |
| 40 | 207.5 | 26.4 | 194 | 1 | FGF7_SHEEP | P48808 oviss aries |
| 41 | 206.5 | 26.3 | 207 | 1 | FGF6_RAT | O54769 rattus norv |
| 42 | 205.5 | 26.2 | 207 | 1 | FGF6_HUMAN | O43320 homo sapien |
| 43 | 204.5 | 26.1 | 194 | 1 | FGF7_PIG | O9n198 sus scrofa |
| 44 | 203 | 25.9 | 208 | 1 | FGF4_HUMAN | O15520 homo sapien |
| 45 | 203 | 25.9 | 215 | 1 | FGF4_RAT | P70492 rattus norv |

ALIGNMENTS

RESULT 1
FGF2_HUMAN
ID P09038; STANDARD; PRT; 155 AA.
AC P09038;
DT 01-NOV-1988 (Rel. 09, Created)
DT 01-NOV-1988 (Rel. 09, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostateptin).
GN FGF2 OR FGF2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
NCBI_TaxID=9606;
RX MEDLINE=87217066; PubMed=3472745;
RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Friedman J.,
RA Gospodarowicz D., Fiddes J.C.;
RT "Human basic fibroblast growth factor: nucleotide sequence and genomic organization.";
RT EMBO J. 5:2523-2528(1986).
[2]
RX MEDLINE=87213238; PubMed=3579930;
RA Sommer A., Brewer M.T., Thompson R.C., Moscatelli D., Presta M.,
RA Rifkin D.B.;
RT "A form of human basic fibroblast growth factor with an extended amino terminus.";
RT Biochem. Biophys. Res. Commun. 144:543-550(1987).
[4]
RX MEDLINE=87162468; PubMed=2435575;
RA Kurokawa T., Sasada R., Igarashi K.;
RT "Cloning and expression of cDNA encoding human basic fibroblast growth factor.";
RT FEBS Lett. 213:189-194(1987).
[5]
RX MEDLINE=89184522; PubMed=2539817;
RA Prats H., Kaghad M., Prats A.C., Klagsbrun M., Lelias J.M.,
RA Llaunz P., Chalon P., Tauber J.P., Amelric F., Smith J.A.,
RA Caput D.;
RT "High molecular mass forms of basic fibroblast growth factor are initiated by alternative CUG codons.";
RT Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989).
[6]
RX MEDLINE=86275260; PubMed=3732516;

Query Match 100.0%; Score 785; DB 1; Length 155;
 Best Local Similarity 100.0%; Pred. No. 6,7e-76;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPDDGGGAPPPGPHFHPKRLCYCKNGGFFLRHPDGVADVREKSDPHIKLOLAER 60
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 DB 10 PALPDDGGGAPPPGPHFHPKRLCYCKNGGFFLRHPDGVADVREKSDPHIKLOLAER 69
 |||||||

OY 61 GVSISGVANRYLAKMEDGRLLASCVTDECFEFLERLSNNYTRYSRKYSYVALKR 120
 |||||||
 DB 70 GVSISGVANRYLAKMEDGRLLASCVTDECFEFLERLSNNYTRYSRKYSYVALKR 129
 |||||||

OY 121 TGOYKLGSKTGPQKAILFLPMSAKS 146
 |||||||
 DB 130 TGOYKLGSKTGPQKAILFLPMSAKS 155
 |||||||

RESULT 2
 FGF2_BOVIN STANDARD; PRT; 155 AA.
 ID FGF2_BOVIN
 AC P03969;
 DT 23-OCT-1986 (Rel. 02, Last sequence update)
 DT 23-OCT-1986 (Rel. 02, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
 DE growth factor) (BFGF) (Prostathionin) [Contains: Kidney-derived growth
 DE factor].
 GN FGF2 OR FGF-2.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RP MEDLINE-86261806; PubMed-2425435;
 RA Abraham J.A., Mergia A., Whang J.L., Tumolo A., Friedman J.,
 RA Hjerlild K.A., Gospodarowicz D., Fiddes J.C.;
 RT "Nucleotide sequence of a bovine clone encoding the angiogenic
 RT protein, basic fibroblast growth factor.";
 RL Science 233:345-348(1986).
 RN [2]
 RP MEDLINE-87217066; PubMed-3472745;
 RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.;
 RT "Human basic fibroblast growth factor: nucleotide sequence, genomic
 RT organization, and expression in mammalian cells.";
 RL Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).
 RN [3]
 RP MEDLINE-86016731; PubMed-3863109;
 RA Esch F., Baird A., Ling N., Ueno N., Hill F., Denoroy L., Klepper R.,
 RA Gospodarowicz D., Boehlen P., Guillemin R.;
 RT "Primary structure of bovine pituitary basic fibroblast growth factor
 RT (FGF) and comparison with the amino-terminal sequence of bovine brain
 RT acidic FGF.";
 RL Proc. Natl. Acad. Sci. U.S.A. 82:6507-6511(1985).
 RN [4]
 RP MEDLINE-86295737; PubMed-3741423;
 RA Ueno N., Baird A., Esch F., Ling N., Guillemin R.;
 RT "Isolation of an amino terminal extended form of basic fibroblast
 RT growth factor.";
 RL Biochem. Biophys. Res. Commun. 138:580-588(1986).
 RN [5]
 RP MEDLINE-86095426; PubMed-4081126;
 RA Baird A., Esch F., Boehlen P., Ling N., Gospodarowicz D.;
 RT "Isolation and partial characterization of an endothelial cell growth
 RT factor from the bovine kidney: homology with basic fibroblast growth
 RT factor.";

RL Regul. Pept. 12:201-213(1985).
 RN [6]
 RP MEDLINE-87119165; PubMed-3809608;
 RC TISSUE-Kidney;
 RX Ueno N., Baird A., Esch F., Shimasaki S., Ling N., Guillemin R.;
 RT "Purification and partial characterization of a mitogenic factor from
 RT bovine liver: structural homology with basic fibroblast growth
 RT factor.";
 RL Regul. Pept. 16:135-145(1986).
 RN [7]
 RP MEDLINE-91095983; PubMed-1702556;
 RX Zhu X., Komiya H., Chirino A., Farnam S., Fox G.M., Arakawa T.,
 RA Hsu B.T., Rees D.C.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth
 RT factors.";
 RL Science 251:90-93(1991).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
 CC AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC -----
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 CC or send an email to license@sib-sib.ch).
 CC -----
 CC EMBL: M13440; AAA30518.1; -
 CC PIR: A24663; GKBOB.
 CC PIR: A24819; A24819.
 CC PIR: A32878; A32878.
 CC PDB: 1BAS; 31-OCT-93.
 CC InterPro: IPR002348; IL1_HBGF.
 CC InterPro: IPR002209; HB/F-growthfact.
 CC Pfam: PF00167; FGF_1.
 CC PRINTS: PR00262; IL1HBGF.
 CC PRODOM: PD000831; HB/F-growthfact; 1.
 CC SMART: SM00442; FGF_1.
 CC PROSITE: PS00247; HBGF_FGF; 1.
 CC Growth factor; Mitogen; Angiogenesis; Heparin-binding;
 CC 3D-structure.
 CC FT PROPEP 1 9
 CC FT CHAIN 10 155
 CC FT CHAIN 25 155
 CC FT SITE 46 48
 CC FT SITE 88 90
 CC FT BINDING 27 31
 CC FT BINDING 116 119
 CC FT STRAND 30 34
 CC FT STRAND 35 38
 CC FT STRAND 39 43
 CC FT STRAND 45 46
 CC FT STRAND 49 52
 CC FT STRAND 55 56
 CC FT STRAND 58 60
 CC FT HELIX 62 68
 CC FT STRAND 69 70
 CC FT TURN 71 76
 CC FT TURN 77 80
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 CC FT TURN 87 88
 CC FT STRAND 91 94
 CC FT STRAND 95 101
 CC FT HELIX 103 107
 CC FT STRAND 109 110
 CC -----
 CC HEPARIN-BINDING GROWTH FACTOR 2.
 CC KIDNEY-DERIVED GROWTH FACTOR.
 CC CELL ATTACHMENT SITE (POTENTIAL).
 CC CELL ATTACHMENT SITE (POTENTIAL).
 CC HEPARIN (POTENTIAL).
 CC HEPARIN (POTENTIAL).

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      FT STRAND      113      117
      TT TURN        121      122
      TT STRAND      124      124
      TT STRAND      127      127
      TT TURN        129      130
      TT STRAND      133      133
      TT HELIX       136      138
      TT TURN        141      142
      TT HELIX       144      146
      TT STRAND      148      151
      SO SEQUENCE    155 AA; 17250 MM; B6CE70FA6107129 CRC64;

Query Match      98.9%; Score 776; DB 1; Length 155;
Best Local Similarity 98.6%; Pred. No. 6e-75;
Matches 144; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

OY 1 PALPEDGSSGAFPPGHFDPKRLCYCKNGFFLRIHPDGRVGVREKSPHIKLOLAER 60
DB 10 PALPEDGSSGAFPPGHFDPKRLCYCKNGFFLRIHPDGRVGVREKSPHIKLOLAER 69
OY 61 GVSTIKGVCANRYLAKMEDGRILASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 70 GVSTIKGVCANRYLAKMEDGRILASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 129
OY 121 TGQYKLGSKTGPGRKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPGRKAILFLPMSAKS 155

RESULT 3
FGF2_SHEEP      STANDARD;      PRT;      155 AA.
AC P20003;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (basic fibroblast
DE growth factor) (BFGF) (Prostatropin).
GN FGF2 OR FGF-2.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RA Sutton R., Ward W.G., Raphael K.A., Cam G.R.;
RA submitted (SEP-1994) to the EMBL/Genbank/DBJ databases.
RN [2]
RX MEDLINE=86055577; PubMed=3678486;
RA Simpson R.J., Moritz R.L., Lloyd C.J., Fabri L.J., Nice E.C.,
RA Rubira M.R., Burgess A.W.;
RA "Primary structure of ovine pituitary basic fibroblast growth
RT factor.";
RT FEBS Lett 224:128-132(1987).
RL
-1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
-1- IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
-1- VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
-1- CONCENTRATION OF THESE 2 GROWTH FACTORS.
-1- SUBUNIT: MONOMER.
-1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
-1- AREG.
-1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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DR EMBL: L36136; AAA31519.1; -.
DR PIR: S00185; S00185.
DR HSSP; P09038; IBF.
DR InterPro; IPR002209; HB/F-growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR PRODOM; PD000831; HB/F-growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 9
FT CHAIN 10 155
FT SITE 45 48 HEPARIN-BINDING GROWTH FACTOR 2.
FT SITE 87 90 CELL ATTACHMENT SITE (POTENTIAL).
FT BINDING 27 31 HEPARIN (POTENTIAL).
FT BINDING 116 119 HEPARIN (POTENTIAL).
SO SEQUENCE 155 AA; 17280 MM; B5F2364BA610606D CRC64;

Query Match      98.1%; Score 770; DB 1; Length 155;
Best Local Similarity 97.9%; Pred. No. 2.6e-74;
Matches 143; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

OY 1 PALPEDGSSGAFPPGHFDPKRLCYCKNGFFLRIHPDGRVGVREKSPHIKLOLAER 60
DB 10 PALPEDGSSGAFPPGHFDPKRLCYCKNGFFLRIHPDGRVGVREKSPHIKLOLAER 69
OY 61 GVSTIKGVCANRYLAKMEDGRILASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 70 GVSTIKGVCANRYLAKMEDGRILASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 129
OY 121 TGQYKLGSKTGPGRKAILFLPMSAKS 146
DB 130 TGQYKLGSKTGPGRKAILFLPMSAKS 155

RESULT 4
FGF2_RAT        STANDARD;      PRT;      154 AA.
AC P13109;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (basic fibroblast
DE growth factor) (BFGF) (Prostatropin).
GN FGF2 OR FGF-2.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RA STRAIN=Sprague-Dawley; TISSUE=Ovary;
RX MEDLINE=86061721; PubMed=3196337;
RA Shimazaki S., Emoto N., Koba A., Mercado M., Shibata F.,
RA Cooksey K., Baild A., Ling N.;
RA "Complementary DNA cloning and sequencing of rat ovarian basic
RT fibroblast growth factor and tissue distribution study of its mRNA.";
RT Biochem. Biophys. Res. Commun. 157:256-263(1988).
RN [2]
RX SEQUENCE FROM N.A.
RP TISSUE=Brain;
RX MEDLINE=88262516; PubMed=3387229;
RA Kurokawa T., Seno M., Igarashi K.;
RA "Nucleotide sequence of rat basic fibroblast growth factor cDNA.";
RL Nucleic Acids Res. 16:5201-5201(1988).
RN [3]
RP SEQUENCE OF 1-28 FROM N.A.
RX TRAIN=Sprague-Dawley; TISSUE=Testis;
RX SDLINE=97200905; PubMed=9048734;
RA Isumarathi K.B.S., Jin Y., Cattini P.A.;
RT Cloning of the rat fibroblast growth factor-2 promoter region and
RT its response to mitogenic stimuli in glioma C6 cells.";

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RL J. Neurochem. 68:898-908(1997).
RN [4]
RP SEQUENCE OF 35-154 FROM N.A.
RC STRAIN-Sprague-Dawley; TISSUE-Brain;
RX MEDLINE-92329546; PubMed-1378302;
RA El-Husseini A.E.-D., Paterson J.A., Myal Y., Shiu R.P.C.;
RT "PCR detection of the rat brain basic fibroblast growth factor (brcf)
RL Blochim. Biophys. Acta 1131:314-316(1992).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- TISSUE SPECIFICITY: FOUND IN ALL THE TISSUES EXAMINED.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC AEGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC -----
DR EMBL: M22427; AAA41210.1; -
DR EMBL: X07285; CAA30265.1; -
DR EMBL: U78079; AAC53225.1; -
DR EMBL: X61697; CAA43863.1; -
DR PIR: S00876; S00876.
DR PIR: A31674; A31674.
DR HSSP: P09038; 1BFF.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IIL_HBGF.
DR Pfam: PF00167; FGF, 1.
DR PRINTS: PR00262; IILHBGF.
DR PRODOM: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF, 1.
DR PROSITE: PS00247; HBGF_FGF, 1.
DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
KM PROPEP 1 9
FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 26 30 HEPARIN (POTENTIAL).
FT BINDING 115 118 HEPARIN (POTENTIAL).
SQ SEQUENCE 154 AA; 17139 MW; 1A0F1AF423BD403 CRC64;

Query Match 97.0%; Score 761.5; DB 1; Length 154;
Best Local Similarity 97.3%; Pred. No. 2e-73;
Matches 142; Conservative 3; Mismatches 0; Indels 1; Gaps 1;

OY 1 PALPDEGSGAPPGHFPKPKRLKNGGFFLRHPDGVGVREKSDPHIKLODAEER 60
DB 10 PALPDEGG-GAPPGHFPKPKRLKNGGFFLRHPDGVGVREKSDPHVLODAEER 68
OY 61 GVAVSIKVCANRYLAKMKEDGRLASKCVYDECFEERLESNNYNTYRSKRYSWYALR 120
DB 69 GVAVSIKVCANRYLAKMKEDGRLASKCVYDECFEERLESNNYNTYRSKRYSWYALR 128
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 129 TGQYKLGSKTGPQKAILFLPMSAKS 154

RESULT 5
FEF2_MOUSE STANDARD: PRT: 154 AA.
AC P15655;
D7 01-APR-1990 (Rel. 14, Created)
D7 01-APR-1990 (Rel. 14, Last sequence update)
D7 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast

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DE growth factor) (BFGF) (Prostatropin).
GN FGF2 OR FGF-2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Euteria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-90201563; PubMed-2218343;
RA Hebert J.M., Basillio C., Goldfarb M., Haub O., Martin G.R.;
RT "Isolation of cDNAs encoding four mouse FGF family members and
RT characterization of their expression patterns during embryogenesis.";
RL Dev. Biol. 138:454-463(1990).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN-C57BL/6J, A/J, and NOD/LtJ; TISSUE-spleen;
RA Ma R.Z., Teuscher C.;
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC AEGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: M30644; AAA37621.1; -
DR EMBL: AF065903; AAC17303.1; -
DR EMBL: AF065904; AAC17504.1; -
DR EMBL: AF065905; AAC17505.1; -
DR PIR: C37360; C37360.
DR HSSP: P09038; 1BFF.
DR MGD: MGI:95516; Fgf2.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IIL_HBGF.
DR Pfam: PF00167; FGF, 1.
DR PRINTS: PR00262; IILHBGF.
DR PRODOM: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF, 1.
DR PROSITE: PS00247; HBGF_FGF, 1.
DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
KM PROPEP 1 9
FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 26 30 HEPARIN (POTENTIAL).
FT BINDING 115 118 HEPARIN (POTENTIAL).
SQ SEQUENCE 154 AA; 17153 MW; 689F677416274388 CRC64;

Query Match 96.4%; Score 756.5; DB 1; Length 154;
Best Local Similarity 96.6%; Pred. No. 6.8e-73;
Matches 141; Conservative 4; Mismatches 0; Indels 1; Gaps 1;

OY 1 PALPDEGSGAPPGHFPKPKRLKNGGFFLRHPDGVGVREKSDPHIKLODAEER 60
DB 10 PALPDEGGA-APPGHPKPKRLKNGGFFLRHPDGVGVREKSDPHVLODAEER 68
OY 61 GVAVSIKVCANRYLAKMKEDGRLASKCVYDECFEERLESNNYNTYRSKRYSWYALR 120
DB 69 GVAVSIKVCANRYLAKMKEDGRLASKCVYDECFEERLESNNYNTYRSKRYSWYALR 128
OY 121 TGQYKLGSKTGPQKAILFLPMSAKS 146
DB 129 TGQYKLGSKTGPQKAILFLPMSAKS 154

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RESULT 6
FGF2_RABIT
ID FGF2_RABIT STANDARD: PRT: 137 AA.
AC P48799:
DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 (HBGF-2) (Basic fibroblast growth
DE factor) (BFGF) (Prostatropin) (Fragment).
GN FGF2.
OS Oryctolagus cuniculus (Rabbit).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-New Zealand white; TISSUE-Smooth muscle;
RX MEDLINE=93343209; Pubmed=9342599;
RA Winkles J.A., Friesel R., Alberts G.F., Janat M.F., Lian G.;
RT "Elevated expression of basic fibroblast growth factor in an
RT immortalized rabbit smooth muscle cell line.";
RL Am. J. Pathol. 143:518-527(1993).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: L12034; AAA31248.1; -.
DR HSP: P09038; 1BFF.
DR InterPro: IPR002209; HB/F-growthfact.
DR Pfam: PF00167; FGF_1.
DR PRODOM: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF_1.
DR PROSITE: PS00247; HBGF_FGF_1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT BINDING 18 22
FT BINDING 107 110 HEPARIN (POTENTIAL).
FT NON_TER 137 137
SQ SEQUENCE 137 AA; 15418 MW; 0D9E457B88E8C51 CRC64;
Query Match 94.08; Score 738; DB 1; Length 137;
Best Local Similarity 99.38; Pred. No. 5.3e-71;
Matches 136; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
OY 1 PALPDDGGGAFPPGHFDPKRLCKNGGFLRIHPDGRVGVREKSPHILQLQAEER 60
DB 1 PALPDDGGGAFPPGHFDPKRLCKNGGFLRIHPDGRVGVREKSPHILQLQAEER 60
OY 61 GVSISIKGVANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 61 GVSISIKGVANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
OY 121 TGQYKLGSKTGPQKAI 137
DB 121 TGQYKLGSKTGPQKAI 137
OY 121 TGQYKLGSKTGPQKAI 137
DB 121 TGQYKLGSKTGPQKAI 137
RESULT 7
FGF2_CHICK
ID FGF2_CHICK STANDARD: PRT: 158 AA.
AC P48800:
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DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
DE growth factor) (BFGF).
GN FGF2 OR FGF-2.
OS Gallus gallus (Chicken).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC Gallus.
OX NCBI_TaxID=9031;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=93246053; Pubmed-7683281;
RA Borja A.Z., Zeller R., Meljers C.;
RT "Expression of alternatively spliced bfgf first coding exons and
RT antisense mRNAs during chicken embryogenesis.";
RL Dev. Biol. 157:110-118(1993).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC -----
DR EMBL: M95707; AAA48617.1; -.
DR HSP: P09038; 1BFF.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF_1.
DR PRINTS: PR00262; IL1HBGF.
DR PRODOM: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF_1.
DR PROSITE: PS00247; HBGF_FGF_1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 12
FT BINDING 13 158 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 30 34 HEPARIN (POTENTIAL).
FT BINDING 119 122 HEPARIN (POTENTIAL).
SQ SEQUENCE 158 AA; 17374 MW; 7B69B684C17F1816 CRC64;
Query Match 92.18; Score 723; DB 1; Length 158;
Best Local Similarity 91.88; Pred. No. 2.4e-69;
Matches 134; Conservative 5; Mismatches 7; Indels 0; Gaps 0;
OY 1 PALPDDGGGAFPPGHFDPKRLCKNGGFLRIHPDGRVGVREKSPHILQLQAEER 60
DB 13 PALPDDGGGAFPPGHFDPKRLCKNGGFLRIHPDGRVGVREKSPHILQLQAEER 72
OY 61 GVSISIKGVANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKR 120
DB 73 GVSISIKGVANRYLAMKEDGRLALKCATECFEERLESNNYNTYRSRKYSDWYVALKR 132
OY 121 TGQYKLGSKTGPQKAI 146
DB 121 TGQYKLGSKTGPQKAI 146
OY 133 TGQYKLGSKTGPQKAI 158
DB 133 TGQYKLGSKTGPQKAI 158
RESULT 8
FGF2_MONDO
ID FGF2_MONDO STANDARD: PRT: 156 AA.
AC P48796;
DT 01-FEB-1996 (Rel. 33, Created)
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DT 01-FEB-1996 (Rel. 33, last sequence update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin).
GN FGF2.
OS Monodelphis domestica (Short-tailed grey opossum).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Metatheria; Didelphimorphia; Didelphidae; Monodelphis.
CX NCBI_TaxID=13616;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=EYE;
RX MEDLINE=94296558; PubMed=8024698;
RA Kusewitt D.F., Sabourin C.L.K., Sherburn T.E., Ley R.D.;
RT "Characterization of cDNA encoding basic fibroblast growth factor of the marsupial Monodelphis domestica.";
RL DNA Cell Biol. 13:549-554(1994).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC -----
DR EMBL: Z15154; CAI78854.1; ALT_INT.
DR HSSP: P09038; 1BFF.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IIL_HBGF.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; IIL_HBGF.
DR ProDom: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF; 1.
DR PROSITE: PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 9
FT CHAIN 10 156 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 28 32 HEPARIN (POTENTIAL).
FT BINDING 117 120 HEPARIN (POTENTIAL).
SQ SEQUENCE 156 AA; 17303 MW; 7E55FCC49BF1209 CRC64;
Query Match 91.7%; Score 719.5; DB 1; Length 156;
Best Local Similarity 92.5%; Pred. No. 5, 6e-69;
Matches 136; Conservative 5; Mismatches 5; Indels 1; Gaps 1;
QY 1 PALPED-GSSGAPPPHFDPKRLKCKNGGFLLRHPDGRVGVREKSDPHIKQLQAEER 59
DB 10 PALSGGGGGAFFPGHFDPKRLKCKNGGFLLRHPDGRVGVREKSDPHIKQLQAEER 69
QY 60 RGVSTIKGVCANRYLAKMKEDGRLLASCVYDECFEERLESNNYNTYRSRKYTSWYALK 119
DB 70 RGVSTIKGVCANRYLAKMKEDGRLLAKTYTECFEERLESNNYNTYRSRKYTSWYALK 129
QY 120 RTGOYKLGSKTGPGRKAILFLPMASAKS 146
DB 130 RTGOYKLGSKTGPGRKAILFLPMASAKS 156
RESULT 9
ID FGF2_XENLA STANDARD; PRT; 155 AA.
AC P12226;
DT 01-OCT-1989 (Rel. 12, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)

DT 15-JUN-2002 (Rel. 41, last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).
GN FGF2 OR FGF-2.
OS Xenopus laevis (African clawed frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipiloidea; Pipidae;
CX NCBI_TaxID=8355;
RN [1]
RP SEQUENCE FROM N.A.
RC MEDLINE=89058621; PubMed=3194757;
RA Klinehan D., Abraham J., Haaparanta T., Paillet T., Kirschner M.;
RT "The presence of fibroblast growth factor in the frog egg: its role as a natural mesoderm inducer.";
RL Science 242:1053-1056(1988).
RN [2]
RP SEQUENCE OF 95-155 FROM N.A.
RC MEDLINE=88052890; PubMed=3479265;
RA Klinehan D., Kirschner M.;
RT "Synergistic induction of mesoderm by FGF and TGF-beta and the identification of an mRNA coding for FGF in the early Xenopus embryo.";
RL Cell 51:869-877(1987).
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC -----
DR EMBL: M18067; AAA49726.1; -.
DR PIR: A29618; A29618.
DR PIR: A40117; A40117.
DR HSSP: P09038; 1BFF.
DR InterPro: IPR002209; HB/F-growthfact.
DR InterPro: IPR002348; IIL_HBGF.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; IIL_HBGF.
DR ProDom: PD000831; HB/F-growthfact; 1.
DR SMART: SM00442; FGF; 1.
DR PROSITE: PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 9
FT CHAIN 10 155 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 27 31 HEPARIN (POTENTIAL).
FT BINDING 116 119 HEPARIN (POTENTIAL).
FT CONFLICT 111 111 MISSING (IN REF. 2).
SQ SEQUENCE 155 AA; 17241 MW; 036735C8063142FD CRC64;
Query Match 82.3%; Score 646; DB 1; Length 155;
Best Local Similarity 82.9%; Pred. No. 3, 2e-61;
Matches 121; Conservative 9; Mismatches 16; Indels 0; Gaps 0;
QY 1 PALPEDGSGAPPPHFDPKRLKCKNGGFLLRHPDGRVGVREKSDPHIKQLQAEER 60
DB 10 PTESEDGAGTNPFSFGSFKDPKRLKCKNGGFLLRHPDGRVGVREKSDPHIKQLQAEER 69
QY 61 GYVSTIKGVCANRYLAKMKEDGRLLASCVYDECFEERLESNNYNTYRSRKYTSWYALKR 120
DB 70 GYVSTIKGVCANRYLAKMKEDGRLLASCVYDECFEERLESNNYNTYRSRKYTSWYALKR 129
QY 121 TGOYKLGSKTGPGRKAILFLPMASAKS 146
DB 130 TGOYKLGSKTGPGRKAILFLPMASAKS 155
RESULT 10
ID FGF1_MESAU STANDARD; PRT; 155 AA.
AC F12226;
DT 01-OCT-1989 (Rel. 12, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)

AC P34004; (Rel. 28, Created)
 DT 01-FEB-1994 (Rel. 28, Last sequence update)
 DT 01-FEB-1994 (Rel. 28, Last annotation update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF).
 GN HGFL OR FGF-1.
 OS Mesocricetus auratus (Golden hamster).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
 OC Mesocricetus.
 NC NCBL_TaxID=10036;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=90270291; Pubmed=1693366;
 RA Hall J.A., Harris M.A., Malark M., Manesson P.E., Zhou H., Harris S.E.;
 RT "Characterization of the hamster DDT-1 cell afGF/HBGF-I gene and CDNA and its modulation by steroids";
 RL J. Cell. Biochem. 43:17-26(1990).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY THAN DOES BFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 DR PIR; A60721; A60721.
 DR HSSP; P05230; IRL.
 DR InterPro: IPR002209; HB/F_growthfact.
 DR InterPro: IPR002348; ILL_HBGF.
 DR Pfam; PF00167; FGF_1.
 DR PRINTS; PR00262; ILLHBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF_1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 KM Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPER 1 15 BY SIMILARITY.
 FT CHAIN 16 135 HEPARIN-BINDING GROWTH FACTOR 1.
 FT BINDING 24 28 HEPARIN (POTENTIAL).
 FT BINDING 113 116 HEPARIN (POTENTIAL).
 FT SEQUENCE 155 AA; 17403 MW; 415E5C760E412CC5 CRC64;
 SQ
 Query Match 50.4%; Score 396; DB 1; Length 155;
 Best Local Similarity 56.6%; Pred. No. 8.3e-35;
 Matches 77; Conservative 16; Mismatches 41; Indels 2; Gaps 1;
 QY 13 PGHFHDKRLKCKNGGFELRHDPGRVYDGRKSDPHIKIQLQLOAERGVSIRKVCANR 72
 DB 19 PPGNKKPKLXCNGSHFLRLIPDGYDGRSDQHIQLOLAHESAGEYIKGTETGQ 78
 QY 73 YLANKEGDRLLASKCVYDECFEERLESNNYNTYRSKRT--SWYVALKRTGYKLGSKT 130
 DB 79 YLANDTDLTGLSGQSPNECLERLEENHYNTYTSKKHAKNMVFGKKNKSGCRGPR 138
 QY 131 GPGOKATLFLPMASKS 146
 DB 139 HYGOKATLFLPLVSS 154
 RESULT 11
 FGFL_HUMAN STANDARD; PRT; 155 AA.
 AC P05230; P07502;
 DT 13-AUG-1987 (Rel. 05, Created)
 DT 13-AUG-1987 (Rel. 05, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Beta-endothelial cell growth factor) (ECGF-beta).
 GN FGF1 OR FGFA.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 OX NCBL_TaxID=9605;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=86261805; Pubmed=3523756;
 RA Jaye M., Howk R., Burgess W., Ricca G.A., Chiu I.-M., Ravera M.W.,
 RA O'Brien S.J., Modl W.S., MacIag T., Drohan W.N.;
 RT "Human endothelial cell growth factor: cloning, nucleotide sequence, and chromosome localization.";
 RL Science 233:541-545(1986).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Brain stem;
 RX MEDLINE=89343957; Pubmed=2474753;
 RA Wang W.P., Lehtoma K., Varban M.L., Krishnan I., Chiu I.M.;
 RT "Cloning of the gene coding for human class I heparin-binding growth factor and its expression in fetal tissues.";
 RL Mol. Cell. Biol. 9:2387-2395(1989).
 RN [3]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Brain stem;
 RX MEDLINE=90265618; Pubmed=1693186;
 RA Chiu I.M., Wang W.P., Lehtoma K.;
 RT "Alternative splicing generates two forms of mRNA coding for human heparin-binding growth factor 1.";
 RL Oncogene 5:755-762(1990).
 RN [4]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=90073637; Pubmed=2590193;
 RA Merz A., Tischer E., Graves D., Tumolo A., Miller J.,
 RA Gospodarowicz D., Abraham J.A., Shipley G.D., Fiddes J.C.;
 RT "Structural analysis of the gene for human acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 164:1121-1129(1989).
 RN [5]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92019819; Pubmed=1717925;
 RA Wang W.P., Quick D., Balcerzak S.P., Needleman S.W., Chiu I.M.;
 RT "Cloning and sequence analysis of the human acidic fibroblast growth factor gene and its preservation in leukemia patients.";
 RL Oncogene 6:1521-1529(1991).
 RN [6]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92202857; Pubmed=1372643;
 RA Li Y.L., Kha H., Golden J.A., Mischelisen A.A.J., Goetzl E.J.,
 RA Turk E.J.;
 RT "An acidic fibroblast growth factor protein generated by alternate RT splicing acts like an antagonist.";
 RL J. Exp. Med. 175:1073-1080(1992).
 RN [7]
 RP SEQUENCE OF 1-154 FROM N.A.
 RX MEDLINE=94069734; Pubmed=7504343;
 RA Zhao X.M., Yeoh T.K., Hiebert M., First W.H., Miller G.G.;
 RT "The expression of acidic fibroblast growth factor (heparin-binding growth factor-1) and cytokine genes in human cardiac allografts and T cells.";
 RL Transplantation 56:1177-1182(1993).
 RN [8]
 RP SEQUENCE OF 1-40 FROM N.A.
 RX MEDLINE=90365758; Pubmed=2393407;
 RA Crumley G., Dionne C.A., Jaye M.;
 RT "The gene for human acidic fibroblast growth factor encodes two upstream exons alternatively spliced to the first coding exon.";
 RL Biochem. Biophys. Res. Commun. 171:7-13(1990).
 RN [9]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86296647; Pubmed=2427112;
 RA Harper J.W., Strickland D.J., Lobb R.R.;
 RT "Human class I heparin-binding growth factor: structure and homology to bovine acidic brain fibroblast growth factor.";
 RL Biochemistry 25:4097-4103(1986).
 RN [10]
 RP SEQUENCE OF 16-155.

RX MEDLINE-86295741; PubMed-3527167;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "The complete amino acid sequence of human brain-derived acidic
 fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 138:611-617(1986).
 RN [11]
 RP SEQUENCE OF 16-155.
 RA MEDLINE-87048871; PubMed-3778488;
 RA Gautschi-Sova P., Mueller T., Boehlen P.;
 RT "Amino acid sequence of human acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 140:874-880(1986).
 RN [12]
 RP SEQUENCE OF 16-47.
 RA MEDLINE-86186784; PubMed-3964259;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "Human brain-derived acidic and basic fibroblast growth factors:
 amino terminal sequences and specific mitogenic activities.";
 RL Biochem. Biophys. Res. Commun. 135:541-548(1986).
 RN [13]
 RP SEQUENCE OF 16-49.
 RA MEDLINE-86275260; PubMed-3732516;
 RA Gautschi P., Frater-Schroeder M., Boehlen P.;
 RT "Partial molecular characterization of endothelial cell mitogens from
 human brain: acidic and basic fibroblast growth factors.";
 RL FEBS Lett. 204:203-207(1986).
 RN [14]
 RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).
 RA MEDLINE-96194129; PubMed-8652550;
 RA Blaber M., Disalvo J., Thomas K.A.;
 RT "X-ray crystal structure of human acidic fibroblast growth factor.";
 RL Biochemistry 35:2086-2094(1996).
 RN [15]
 RP STRUCTURE BY NMR OF 24-155.
 RA MEDLINE-94358885; PubMed-7521397;
 RA Pineda-Lucena A., Jimenez M.A., Nieto J.L., Santoro J.,
 RA Gimenez-Gallego G.;
 RT "1H-NMR assignment and solution structure of human acidic fibroblast
 growth factor activated by inositol hexasulfate.";
 RL J. Mol. Biol. 242:81-98(1994).
 RN [16]
 RP STRUCTURE BY NMR OF 24-155.
 RA MEDLINE-97107335; PubMed-8950275;
 RA Pineda-Lucena A., Jimenez M.A., Lozano R.M., Nieto J.L., Santoro J.,
 RA Rico M., Gimenez-Gallego G.;
 RT "Three-dimensional structure of acidic fibroblast growth factor 1n
 solution: effects of binding to a heparin functional analog.";
 RL J. Mol. Biol. 264:162-178(1996).
 RN [17]
 RP STRUCTURE BY NMR OF 25-155.
 RA MEDLINE-98387896; PubMed-9719643;
 RA Lozano R.M., Jimenez M., Santoro J., Rico M., Gimenez-Gallego G.;
 RT "Solution structure of acidic fibroblast growth factor bound to 1,3,
 6-naphthalenesulfonate: a minimal model for the anti-tumoral
 action of suramin and suradistas.";
 RL J. Mol. Biol. 281:899-915(1998).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
 CC THAN DOES bFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC or send an email to license@isb-sib.ch).
 CC EMBL, M13361; AAA79245.1; -

DR EMBL; X51943; CAA36206.1; -
 DR EMBL; M30492; AAA52446.1; -
 DR EMBL; M30490; AAA52446.1; JOINED.
 DR EMBL; M30491; AAA52446.1; JOINED.
 DR EMBL; M60515; AAA51672.1; -
 DR EMBL; M60516; AAA51673.1; -
 DR EMBL; M23087; AAA52638.1; -
 DR EMBL; M23086; AAA52638.1; JOINED.
 DR EMBL; S67291; AAB29057.2; -
 DR EMBL; X65778; CAA46661.1; -
 DR PIR; A23553; A23553.
 DR PIR; A24243; A24243.
 DR PIR; A24301; A24301.
 DR PIR; A24662; A24662.
 DR PIR; A24820; A24820.
 DR PIR; A26386; A26386.
 DR PIR; A33665; A33665.
 DR PIR; S18217; S18217.
 DR PDB; 2AFG; 15-OCT-95.
 DR PDB; 1AXM; 22-APR-98.
 DR PDB; 2AXM; 22-APR-98.
 DR PDB; 1RML; 11-NOV-98.
 DR Genew; HGNC:3665; FGF1.
 DR MIM; 131220; -
 DR InterPro; IPR002209; HB/F-growthfact.
 DR InterPro; IPR002348; ILL_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; ILLHBGF.
 DR ProDom; PD000831; HB/F-growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding; Acetylation;
 KW 3D-structure.
 FT PROPEP 1 15
 FT CHAIN 16 155 HEPARIN-BINDING GROWTH FACTOR 1.
 FT MOD_RES 2 2 ACETYLATION
 FT BINDING 24 28 HEPARIN (POTENTIAL).
 FT BINDING 113 116 HEPARIN (POTENTIAL).
 SQ SEQUENCE 155 AA; 17460 MW; F586EBBF09F1580 CRC64;
 Query Match 49.2%; Score 386; DB 1; Length 155;
 Best Local Similarity 55.9%; Pred. No. 9,4e-34;
 Matches 76; Conservative 16; Mismatches 42; Indels 2; Gaps 1;
 QY 13 PGHFDPKRLCYKNGGFELRHPDGRVDGVREKSPHIKIQIAERGVYSIKVCANR 72
 DB 19 PPNYKPKKLLYCSNGHFLRLIPDGTVDGTRDSOHQIQLQSLASVGEVYIKSTETGQ 78
 QY 73 YLAKMEDGRLLASCVTDECFEERLESNNYNTYRSRKYT--SWYVALKRTGQYKIGSKT 130
 DB 79 YLAMDPDGLLYGSGTPNECLFLERLENNHYNTYISKHAENKMFVGLKKNKSGCKSGPRT 138
 QY 131 GPQKALFLPMSAKS 146
 DB 139 HYGQKALFLPLPVSS 154
 RESULT 12
 FGF1_CHICK
 ID FGF1_CHICK STANDARD; PRT; 155 AA.
 AC P19596;
 DT 01-FEB-1991 (Rel. 17, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast
 DE growth factor) (AFGF) (Alpha-endothelial cell growth factor).
 GN FGF1 OR FGF-1.
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
 OC Gallus.
 OX NCBI_TaxID=9031;
 RX [1]

Wed Dec 4 15:10:43 2002

us-09-886-856-4.rsp

Db 79 FIAMPDGLIGSOTPNNECELEERLEENHNTYISKHAEKHFVGLKKNRSGKLGPR 138
QY 131 GPGOKAILELPPMSAKS 146
| | | | | : |
Db 139 HPGOKAILELPLPVSS 154

Search completed: December 4, 2002, 11:10:01
Job time : 9.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 4, 2002, 11:09:18 ; Search time 26.5 Seconds

(without alignments)
1135.203 Million cell updates/sec

Title: US-09-886-856-4

Perfect score: 785
Sequence: 1 PALPEDEGSGAFPPGHEKDP.....GSKTGPQKAILFLPMASAKS 146

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL_21.*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_virus:*
16: sp_bacteriap:*
17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-----------|---------------------|
| 1 | 785 | 100.0 | 196 | 4 P78443 | P78443 homo sapien |
| 2 | 741 | 94.4 | 153 | 4 O925A3 | O925A3 mus musculus |
| 3 | 701 | 89.3 | 170 | 11 O60487 | O60487 cavia porce |
| 4 | 682 | 86.9 | 130 | 6 O77767 | O77767 canis famill |
| 5 | 667 | 85.0 | 155 | 13 O90Y92 | O90Y92 cynops pyrr |
| 6 | 590 | 75.2 | 155 | 13 O8QFR9 | O8QFR9 fugu rubrip |
| 7 | 585 | 74.5 | 111 | 6 O9BDX1 | O9BDX1 macaca mula |
| 8 | 567 | 72.2 | 125 | 13 O98TP8 | O98TP8 cynops pyrr |
| 9 | 561 | 71.3 | 108 | 6 O9N1S7 | O9N1S7 capreolus c |
| 10 | 490 | 62.4 | 109 | 11 O925A1 | O925A1 mus musculus |
| 11 | 486 | 61.9 | 112 | 11 O925A2 | O925A2 mus musculus |
| 12 | 476 | 60.6 | 101 | 13 P79706 | P79706 cynops pyrr |
| 13 | 468.5 | 59.7 | 146 | 13 O07659 | O07659 gallus gall |
| 14 | 457 | 58.2 | 87 | 6 O8NMP4 | O8NMP4 equus cabal |
| 15 | 341 | 43.4 | 76 | 6 O9NOV2 | O9NOV2 ovis aries |
| 16 | 292 | 37.2 | 106 | 6 O9N1S8 | O9N1S8 capreolus c |

| | | | | | |
|----|-------|------|-----|-----------|--------------------|
| 17 | 287 | 36.6 | 114 | 4 O16443 | O16443 homo sapien |
| 18 | 287 | 36.6 | 114 | 4 O00527 | O00527 homo sapien |
| 19 | 251 | 32.0 | 208 | 11 O8R5L5 | O8R5L5 rattus norv |
| 20 | 249 | 31.7 | 196 | 13 O9YH31 | O9YH31 notophthalm |
| 21 | 245 | 31.2 | 124 | 13 O90X05 | O90X05 ambystoma m |
| 22 | 239 | 30.4 | 245 | 11 O8R5L9 | O8R5L9 rattus norv |
| 23 | 230 | 29.3 | 195 | 11 O8R5L6 | O8R5L6 rattus norv |
| 24 | 229 | 29.2 | 206 | 13 O9YGD8 | O9YGD8 oncorhynch |
| 25 | 224 | 28.5 | 111 | 13 O90XQ1 | O90XQ1 ambystoma m |
| 26 | 217.5 | 27.7 | 201 | 13 O8QG59 | O8QG59 ambystoma m |
| 27 | 215 | 27.4 | 208 | 6 O95L12 | O95L12 sus scrofa |
| 28 | 213 | 27.1 | 191 | 13 O9DPC9 | O9DPC9 brachydanio |
| 29 | 208 | 26.5 | 208 | 13 O9PY11 | O9PY11 xenopus lae |
| 30 | 208 | 26.5 | 212 | 11 O9ESL9 | O9ESL9 mus musculu |
| 31 | 205.5 | 26.2 | 207 | 11 O9ESL8 | O9ESL8 mus musculu |
| 32 | 205.5 | 26.2 | 207 | 11 O9ER05 | O9ER05 mus musculu |
| 33 | 204 | 26.0 | 212 | 11 O9ESR9 | O9ESR9 rattus norv |
| 34 | 203 | 25.9 | 208 | 6 O95K97 | O95K97 macaca fasc |
| 35 | 202.5 | 25.8 | 212 | 13 O42407 | O42407 gallus gall |
| 36 | 200.5 | 25.5 | 301 | 5 O8T8A3 | O8T8A3 clona savig |
| 37 | 195.5 | 24.9 | 134 | 13 O90XQ3 | O90XQ3 ambystoma m |
| 38 | 193.5 | 24.6 | 213 | 6 O9N1B9 | O9N1B9 ovis aries |
| 39 | 193 | 24.6 | 208 | 4 O96P59 | O96P59 homo sapien |
| 40 | 192 | 24.5 | 162 | 11 O8V179 | O8V179 rattus norv |
| 41 | 191.5 | 24.4 | 186 | 6 O95L47 | O95L47 mustela vis |
| 42 | 191 | 24.3 | 62 | 6 O8SP12 | O8SP12 equus cabal |
| 43 | 189.5 | 24.1 | 237 | 13 O9IA16 | O9IA16 gallus gall |
| 44 | 189.5 | 24.1 | 247 | 11 O8R5L7 | O8R5L7 rattus norv |
| 45 | 189 | 24.1 | 112 | 13 O90XP9 | O90XP9 ambystoma m |

ALIGNMENTS

| | | | | | |
|----------|--|--------------|------|---------|--|
| RESULT 1 | | | | | |
| P78443 | | PRELIMINARY: | PRT: | 196 AA. | |
| AC | P78443 | | | | |
| DT | 01-MAY-1997 (TREMBLrel. 03, Created) | | | | |
| DT | 01-MAY-1997 (TREMBLrel. 03, Last sequence update) | | | | |
| DT | 01-JUN-2002 (TREMBLrel. 21, Last annotation update) | | | | |
| DE | 21 Xda basic fibroblast growth factor (BFGF). | | | | |
| GN | BFGF. | | | | |
| OS | Homo sapiens (Human). | | | | |
| OC | Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi; | | | | |
| OC | Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo. | | | | |
| OX | NCBI_TaxID=9606; | | | | |
| RN | [1] | | | | |
| RP | SEQUENCE FROM N.A. | | | | |
| RX | MEDLINE=89184522; PubMed=2538817; | | | | |
| RA | Prats H., Kagnad M., Prats A.C., Klagsbrun M., Lellias J.M., | | | | |
| RA | Liauzun P., Chalon P., Tauber J.P., Amaric F., Smith J.A., Caput D.; | | | | |
| RT | "High molecular mass forms of basic fibroblast growth factor are | | | | |
| RT | initiated by alternative CUG codons." | | | | |
| RL | Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989). | | | | |
| RN | [2] | | | | |
| RP | SEQUENCE OF 81-168 FROM N.A. | | | | |
| RX | MEDLINE=93038590; PubMed=1417798; | | | | |
| RA | Watson R., Anthony F., Pickett M., Lambden P., Masson G.M., | | | | |
| RA | Thomas E.J.; | | | | |
| RT | "Reverse transcription with nested polymerase chain reaction shows | | | | |
| RT | expression of basic fibroblast growth factor transcripts in human | | | | |
| RT | granulosa and cumulus cells from in vitro fertilisation patients." | | | | |
| RL | Biochem. Biophys. Res. Commun. 187:1227-1231(1992). | | | | |
| DR | EMBL: J04513; AAA52532.1; - | | | | |
| DR | EMBL: S67380; AAD13853.1; - | | | | |
| DR | HSSP: P09038; 1BF. | | | | |
| DR | InterPro: IPR002209; HB/F-growthfact. | | | | |
| DR | InterPro: IPR002348; IL1_HBGF. | | | | |
| DR | Pfam: PF00167; FGF; 1. | | | | |
| DR | PRINTS: PR00262; IL1HBGF. | | | | |
| DR | ProDom: PD000831; HB/F-growthfact; 1. | | | | |
| DR | SMART: SM00442; FGF; 1. | | | | |

DR PROSITE: PS00247; HBG-FGF: 1.
 SQ SEQUENCE 196 AA; 21203 MW; D6B5447137E60343 CRC64;
 Query Match 100.0%; Score 785; DB 4; Length 196;
 Best Local Similarity 100.0%; Pred. No. 2.9e-77;
 Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 PALPEDGSSGAFPPGHFDPKRLKCKNGFPLRIHPDGRVGVREKSPDHKLQDAER 60
 DB 51 PALPEDGSSGAFPPGHFDPKRLKCKNGFPLRIHPDGRVGVREKSPDHKLQDAER 110
 OY 61 GVSATKGVANRYLAKMKEDGRLASKCVTDECFEERLESNNYNTYRSKYSWVAALKR 120
 DB 111 GVSATKGVANRYLAKMKEDGRLASKCVTDECFEERLESNNYNTYRSKYSWVAALKR 170
 OY 121 TGOYKLGSKRTGPGOKAILFLPMSAKS 146
 DB 171 TGOYKLGSKRTGPGOKAILFLPMSAKS 196

RESULT 2
 OY25A3 PRELIMINARY; PRT; 153 AA.
 ID 0925A3
 AC 0925A3
 DT 01-DEC-2001 (TREMBLrel. 19, Created)
 DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2.
 GN FGF2.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID:10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN-FVB/N;
 RA Dicks R.P., Grier A.E.;
 RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
 RT expressed in mouse embryos.";
 RL Submitted (FEB-2001) to the EMBL/Genbank/DBJ databases.
 DR EMBL: AY027551; AAK52308.1;
 DR InterPro: IPR002309; HB/F-growthfact.
 DR Pfam: PF00167; FGF_1;
 DR ProDom: PD000831; HB/F-growthfact; 1;
 SQ SEQUENCE 153 AA; 17024 MW; AD8163CD8FA2EFAAB CRC64;

Query Match 94.4%; Score 741; DB 11; Length 153;
 Best Local Similarity 95.9%; Pred. No. 1.3e-72;
 Matches 140; Conservative 4; Mismatches 0; Indels 2; Gaps 2;

OY 1 PALPEDGSSGAFPPGHFDPKRLKCKNGFPLRIHPDGRVGVREKSPDHKLQDAER 60
 DB 10 PALPEDGGA-AEPFGHFKPKRLKCKNGFPLRIHPDGRVGVREKSPDHKLQDAER 68
 OY 61 GVSATKGVANRYLAKMKEDGRLASKCVTDECFEERLESNNYNTYRSKYSWVAALKR 120
 DB 69 GVSATKGVANRYLAKMKEDGRLASKCVTDECFEERLESNNYNTYRSKYSWVAALKR 127
 OY 121 TGOYKLGSKRTGPGOKAILFLPMSAKS 146
 DB 128 TGOYKLGSKRTGPGOKAILFLPMSAKS 153

RESULT 3
 OY60487 PRELIMINARY; PRT; 170 AA.
 AC 060487;
 DT 01-NOV-1996 (TREMBLrel. 01, Created)
 DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2 (FGF-2) (Fibroblast growth factor, basic)
 DE (HBGF) (Heparin-binding growth factor 2) (HBGF-2) (Prostatropin)
 DE (Prostatic growth factor) (Fragments).

GN FGF2.
 OS Cavia porcellus (Guinea pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
 OX NCBI_TaxID:10141;
 RN [1]
 RP SEQUENCE OF 53-170 FROM N.A.
 RC TISSUE-PROSTATE;
 RA Ricciardelli C.;
 RL Submitted (JAN-1996) to the EMBL/Genbank/DBJ databases.
 RN [2]
 RP SEQUENCE OF N-TERMINUS, PARTIAL SEQUENCE, AND ALTERNATIVE SPLICING.
 RX MEDLINE-99273588; PubMed-2730645;
 RA Sommer A., Moscattelli D., Rifkin D.B.;
 RT "An amino-terminally extended and post-translationally modified form
 RT of a 25kD basic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 160:1267-1274(1989).
 RN [3]
 RP PARTIAL SEQUENCE, AND METHYLATION.
 RX MEDLINE-91322114; PubMed-1713785;
 RA Burgess W.H., Bizik J., Mehlman T., Quarto N., Rifkin D.B.;
 RT "Direct evidence for methylation of arginine residues in high
 RT molecular weight forms of basic fibroblast growth factor.";
 RL Cell Regul. 2:87-93(1991).
 RN [4]
 RP CHARACTERIZATION.
 RC TISSUE-BRAIN;
 RX MEDLINE-87289686; PubMed-3475702;
 RA Moscattelli D., Joseph-Silverstein J., Manojas R., Rifkin D.B.;
 RT "Mr 25,000 heparin-binding protein from guinea pig brain is a high
 RT molecular weight form of basic fibroblast growth factor.";
 RL Proc. Natl. Acad. Sci. U.S.A. 84:5778-5782(1987).
 CC -1 FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTROPIC
 CC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC
 CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND
 CC HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOATTRACTANT FOR
 CC MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION,
 CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS
 CC SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
 CC ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
 CC -1 SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFR1 AND AT LEAST
 CC ONE HEPARAN SULFATE (BY SIMILARITY).
 CC -1 ALTERNATIVE PRODUCTS: AT LEAST TWO ISOFORMS: 18 KDA AND 25 KDA
 CC (SHOWN HERE); MAY BE PRODUCED BY USE OF ALTERNATIVE TRANSLATION
 CC INITIATION SITES. BOTH FORMS ARE ACTIVE.
 CC -1 PTM: THE N-TERMINAL OF ISOFORM 18 KDA IS BLOCKED (PROBABLY).
 CC -1 SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC -1 CAUTION: THIS IS A CONCEPTUAL TRANSLATION; MANY FRAMESHIFTS WERE
 CC INTRODUCED FROM RESIDUES 77, 88, 93 AND 149 DOWNWARD TO EXTEND THE
 CC SIMILARITY TO THE HUMAN SEQUENCE AS WELL AS ON THE BASIS OF
 CC PARTIAL AMINO-ACID SEQUENCING.
 CC EMBL: L75974; AAA85394.1; ALT_FRAME.
 DR HSSP: P09038; 1BLA.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR PRINTS: PRO0262; IL1HBGF.
 DR ProDom: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF_1.
 DR PROSITE: PS00247; HBG-FGF: 1.
 DR Growth factor: Mitogen; Vascularization; Heparin-binding;
 KW Alternative initiation; Methylation; Phosphorylation;
 KW developmental protein.
 KW NON_TER 1
 FT NON_CONS 15
 FT CHAIN <1 170
 FT CHAIN 22 170
 FT INT_MET 22 22
 FT DOMAIN 11 14
 FT NON_CONS 50 51
 FT NON_CONS 50 51
 FT YITE 61 63
 FT YITE 103 105
 FT BINDING 50 51
 FT BINDING 105 105

25 KDA BASIC FIBROBLAST GROWTH FACTOR.
 18 KDA BASIC FIBROBLAST GROWTH FACTOR.
 FOR 18 KDA FORM.
 POLY-ALA.
 CELL ATTACHMENT SITE (POTENTIAL).
 CELL ATTACHMENT SITE (POTENTIAL).
 HEPARIN (BY SIMILARITY).
 HEPARIN (BY SIMILARITY).

FT BINDING 143 159 HEPARIN (BY SIMILARITY).
 FT MOD.RES 4 4 METHYLATION (MONO- OR DI-).
 FT MOD.RES 6 6 METHYLATION (MONO- OR DI-).
 FT MOD.RES 8 8 METHYLATION (MONO- OR DI-).
 FT MOD.RES 88 88 PHOSPHORYLATION (BY SIMILARITY).
 FT MOD.RES 136 136 PHOSPHORYLATION (BY SIMILARITY).
 SQ SEQUENCE 170 AA; 18354 MW; F36BDBC736E5FEBC CRC64;

Query Match
 Best Local Similarity 91.1%; Score 701; DB 11; Length 170;
 Matches 133; Conservative 3; Mismatches 4; Indels 6; Gaps 1;

OY 1 PALPDDGGGAGPPGHPKPKRYLCKNGGFRLRHPDGRVDGVRKSDPHIKLOLAER 60
 DB 31 PALPDDGGGAGPPGHPKPKR-----NGGFFLRHPDGRVDGVRKSDPHIKLOLAER 84
 OY 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSKRYTSWYVALKR 120
 DB 85 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSKRYTSWYVALKR 144
 OY 121 TGOYKLGSKTGPQKALIFLPMASAKS 146
 DB 145 TGOYKLGSKTGPQKALIFLPMASAKS 170

RESULT 4

ID 077767 PRELIMINARY; PRT; 130 AA.
 AC 077767;
 DT 01-NOV-1998 (TREMBLrel. 08, Created)
 DT 01-NOV-1998 (TREMBLrel. 08, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (BFGF) (FGF-2) (Heparin-binding growth factor 2) (HBGF-2) (Prostatic growth factor)
 DE (Fragment).
 GN BFGF.
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 RX NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA TISSUE-ADRENAL GLAND;
 RC Trochta O.A., Jacobs R.M., Lamarre J.;
 RT Submitted (Apr-1998) to the EMBL/GenBank/DBJ databases.
 RL Submitted (Apr-1998) to the EMBL/GenBank/DBJ databases.
 CC -1- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTHROPHIC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOTACTICANT FOR MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION, PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
 CC -1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFR1 AND AT LEAST ONE HEPARIN SULFATE (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 DR EMBL: AF060562; AAC35912.1;
 DR HSSP: P09038; 1BFF.
 DR InterPro: IPR002209; HB/F-growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.
 DR PRINTS: PR00262; IL1HBGF.
 DR PRODOM: PD000831; HB/F-growthfact; 1.
 DR SMART: SM00442; FGF_1-growthfact; 1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Vascularization; Heparin-binding; Phosphorylation; Developmental protein.
 FT SITE 21 23 CELL ATTACHMENT SITE (POTENTIAL).
 FT SITE 63 65 CELL ATTACHMENT SITE (POTENTIAL).
 FT BINDING 10 11 HEPARIN (BY SIMILARITY).
 FT BINDING 65 65 HEPARIN (BY SIMILARITY).

FT BINDING 103 119 HEPARIN (BY SIMILARITY).
 FT MOD.RES 48 48 PHOSPHORYLATION (BY SIMILARITY).
 FT MOD.RES 96 96 PHOSPHORYLATION (BY SIMILARITY).
 FT NON_TER 130 130
 SQ SEQUENCE 130 AA; 14902 MW; 21908768787A8A CRC64;

Query Match
 Best Local Similarity 97.7%; Score 682; DB 6; Length 130;
 Matches 127; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

OY 17 FDKPKRYLCKNGGFRLRHPDGRVDGVRKSDPHIKLOLAERGVYSIKGVCANRYLAM 76
 DB 1 FDKPKRYLCKNGGFRLRHPDGRVDGVRKSDPHIKLOLAERGVYSIKGVCANRYLAM 60
 OY 77 KEDGRLASKCVTDECFEERLESNNYNTYRSKRYTSWYVALKRQGYKLGSKTGPQK 136
 DB 61 KEDGRLASKCVTDECFEERLESNNYNTYRSKRYTSWYVALKRQGYKLGSKTGPQK 120
 OY 137 ILFLPMASAKS 146
 DB 121 ILFLPMASAKS 130

RESULT 5

ID 090Y92 PRELIMINARY; PRT; 155 AA.
 AC 090Y92;
 DT 01-DEC-2001 (TREMBLrel. 19, Created)
 DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor-2.
 GN FGF-2.
 OS Cynops pyrrhogaster (Japanese common newt).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
 RX NCBI_TaxID=8330;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Susaki K., Nakamura K., Chiba C., Saito T.;
 RC "Expression of FGF2 during newt retinal development and regeneration."
 RT Submitted (Jul-2001) to the EMBL/GenBank/DBJ databases.
 RL EMBL: AB064664; BAB63249.1;
 DR InterPro: IPR002209; HB/F-growthfact.
 DR Pfam: PF00167; FGF_1.
 DR PRODOM: PD000831; HB/F-growthfact; 1.
 DR PROSITE: PS00247; HBGF_FGF; UNKNOWN.1.
 SQ SEQUENCE 155 AA; 17278 MW; 2B583058538AB8D9 CRC64;

Query Match
 Best Local Similarity 85.0%; Score 667; DB 13; Length 155;
 Matches 125; Conservative 8; Mismatches 13; Indels 0; Gaps 0;

OY 1 PALPDDGGGAGPPGHPKPKRYLCKNGGFRLRHPDGRVDGVRKSDPHIKLOLAER 60
 DB 10 PALPDDGGGAGPPGHPKPKRYLCKNGGFRLRNSGKVDGAREKSDSYIKLOLAER 69
 OY 61 GVSISIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSKRYTSWYVALKR 120
 DB 70 GVSISIKGVCANRYLAMKDDGRLMLKWTDECFEERLESNNYNTYRSKRYTSWYVALKR 129
 OY 121 TGOYKLGSKTGPQKALIFLPMASAKS 146
 DB 130 TGOYKLGSKTGPQKALIFLPMASAKS 155

RESULT 6

ID 08QFR9 PRELIMINARY; PRT; 155 AA.
 AC 08QFR9;
 DT 01-JUN-2002 (TREMBLrel. 21, Created)
 DT 01-JUN-2002 (TREMBLrel. 21, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)

DE Basic fibroblast growth factor.
 GN FGF2.
 OS Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
 OC Acanthomorphi; Acanthopterygii; Percomorpha; Tetraodontiformes;
 OC Tetraodontidae; Takifugu.
 OX NCBI_TaxID=31033;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Botcherby M.R.;
 RT "Comparative vertebrate genomic sequence analysis studies based on
 RT Fugu rubripes";
 RL Thesis (2001), University College London, London, United Kingdom.
 DR EMBL; AJ26040; CAD19830.1;
 SQ SEQUENCE 155 AA; 17113 MW; AEFEL2BDC78FBBC CRC64;
 Query Match 75.2%; Score 590; DB 13; Length 155;
 Best Local Similarity 77.2%; Pred. No. 3.2e-56;
 Matches 112; Conservative 5; Mismatches 28; Indels 0; Gaps 0;
 OY 1 PALPDDGGGGAFFPGHFDPRKLYCKNGFFELRIHPDGRVGVREKSDPHIKLOAEER 60
 DB 10 PSTPEDGGSGGPPGSGFMDPRKLYCKNGFFELRISDCAVDCRKTDPHIKLOATSV 69
 OY 61 GVSATKGCANRYLAMKEDGRLSKCVTDECFFERLESNNYNTYRSRKYTSWYVALKR 120
 DB 70 GEVYKGCANRYLAMNDGRLFGRKATDECHERLESNNYNTYRSRKYPMVGLTR 129
 OY 121 TGOYKLGSKTGPCKAILFLPMSAK 145
 DB 130 TGNYSKTKTGPCKAILFLPMSAK 154
 RESULT 7
 O9BDX1 PRELIMINARY; PRT: 111 AA.
 AC O9BDX1;
 DT 01-JUN-2001 (TREMBlrel. 17, Created)
 DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)
 DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (Fragment).
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
 OC Cercopithecinae; Macaca.
 OX NCBI_TaxID=9544;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Sekhon H.S., Keller J.K., Spindel E.R.;
 RT "Alterations in Collagen and Elastin Gene Expression in Fetal
 RT Pulmonary Vessels in Monkeys Following Prenatal Nicotine Exposure: A
 RT Possible Role of alpha1 Nicotinic Acetylcholine Receptor in Persistent
 RT Pulmonary Hypertension";
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF251270; AK37962.1;
 DR HSSP; P09038; 1BFF.
 DR InterPro; IPR002209; HB/F-growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF_1.
 DR PRINTS; PR00262; IL1HBGF.
 DR PRODOM; PD000831; HB/F-growthfact; 1.
 DR SMART; SM00442; FGF_1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 FT NON_TER 1
 FT TER 111
 SQ SEQUENCE 111 AA; 12633 MW; EC0967A5261F5487 CRC64;
 Query Match 74.5%; Score 585; DB 6; Length 111;
 Best Local Similarity 100.0%; Pred. No. 7.4e-56;
 Matches 111; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 34 IHPDGRVGVREKSDPHIKLOAEERGVVSIKVCANRYLAMKEDGRLSKCVTDEC 93

DB 1 IHPDGRVGVREKSDPHIKLOAEERGVVSIKVCANRYLAMKEDGRLSKCVTDEC 60
 OY 94 FFERLESNNYNTYRSRKYTSWYVALKRGTGKSGTGPCKAILFLPMSA 144
 DB 61 FFERLESNNYNTYRSRKYTSWYVALKRGTGKSGTGPCKAILFLPMSA 111
 RESULT 8
 O98TDB PRELIMINARY; PRT: 125 AA.
 AC O98TDB;
 DT 01-JUN-2001 (TREMBlrel. 17, Created)
 DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)
 DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
 DE Fibroblast growth factor-2 (Fragment).
 GN FGF-2.
 OS Cynops pyrrhogaster (Japanese common newt).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Caudata; Salamandridae; Cynops.
 OX NCBI_TaxID=8330;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Mizuno N., Hayashi T., Kondoh H., Okamoto M.;
 RT "Cynops fibroblast growth factor-2";
 RL Submitted (OCT-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AB049625; BAB40835.1;
 DR HSSP; P09038; 1BFF.
 DR InterPro; IPR002209; HB/F-growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF_1.
 DR PRINTS; PR00262; IL1HBGF.
 DR PRODOM; PD000831; HB/F-growthfact; 1.
 DR SMART; SM00442; FGF_1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 FT NON_TER 1
 FT TER 1
 SQ SEQUENCE 125 AA; 14244 MW; SC27F41DC6E60C13 CRC64;
 Query Match 72.2%; Score 567; DB 13; Length 125;
 Best Local Similarity 87.1%; Pred. No. 7.8e-54;
 Matches 109; Conservative 7; Mismatches 9; Indels 0; Gaps 0;
 OY 23 LYCKNGGFFELIHPDGRVGVREKSDPHIKLOAEERGVVSIKVCANRYLAMKEDGRL 82
 DB 2 LYCKNGGFFELIINDGKVDGAREKSDSYIKLOAEERGVVSIKVCANRYLAMKEDGRL 61
 OY 83 LASKCVTDECFFERLESNNYNTYRSRKYTSWYVALKRGTGKSGTGPCKAILFLPM 142
 DB 62 MALKWITDECFFERLESNNYNTYRSRKYSDWYVALKRGTGKSGTGPCKAILFLPM 121
 OY 143 SAKS 146
 DB 122 SAKS 125
 RESULT 9
 O9N1S7 PRELIMINARY; PRT: 108 AA.
 AC O9N1S7;
 DT 01-OCT-2000 (TREMBlrel. 15, Created)
 DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)
 DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (Fragment).
 GN BFGF.
 OS Capreolus capreolus (roe deer).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoidae;
 OC Cervidae; Odocoileinae; Capreolus.
 OX NCBI_TaxID=9858;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA ISSUE-TESTIS;
 RC MEDLINE=20532861; PubMed=11078967;
 RX

RA Magener A., Biotner S., Goritz F., Fickel J.
RT "Detection of growth factors in the testis of roe deer (Capreolus
capreolus).";
RL Anlm. Reprod. Sci. 64:65-75(2000).
DR EMBL: AF152587; AAF73226.1; -
DR HSSP: P09038; 4FGF.
DR InterPro: IPR002209; HB/F_growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; IL1HBGF.
DR ProDom: PD000831; HB/F_growthfact; 1.
DR SMART: SM00442; FGF; 1.
DR PROSITE: PS00247; HBGF_FGF; 1.
FT NON_TER 1
FT NON_TER 108
SQ SEQUENCE 108 AA; 12399 MW; 6BC7B7244214567E CRC64;

Query Match 71.5%; Score 561; DB 6; Length 108;
Best Local Similarity 98.1%; Pred. No. 2.9e-53;
Matches 106; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

OY 33 RIHPDGVGVREKSPDHKIQLOAEERGVSVIKGCANRYLAMKEDGRLLASKCVTDEC 92
DB 1 RIHPDGVGVREKSPDHKIQLOAEERGVSVIKGCANRYLAMKEDGRLLASKCVTDEC 60
OY 93 FFERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPGRKAILFL 140
DB 61 FFERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPGRKAILFL 108

RESULT 10
O925A1 PRELIMINARY; PRT; 109 AA.

AC O925A1:
DT 01-DEC-2001 (TREMBLrel. 19, Created)
DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.

OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RA STRAIN=FVB/N;
RA Dirks R.P., Grlep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
expressed in mouse embryos."
RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL: AY027558; AAK52310.1; -
DR InterPro: IPR002209; HB/F_growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; IL1HBGF.
DR ProDom: PD000831; HB/F_growthfact; 1.
DR PROSITE: PS00247; HBGF_FGF; UNKNOWN.1.
SQ SEQUENCE 109 AA; 12388 MW; 61074ADE33030860 CRC64;

Query Match 62.4%; Score 490; DB 11; Length 109;
Best Local Similarity 97.9%; Pred. No. 1.5e-45;
Matches 94; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

OY 51 IKLOLAEEERGVSVIKGCANRYLAMKEDGRLLASKCVTDECFFERLESNNYNTYRSRK 110
DB 14 IKLOLAEEERGVSVIKGCANRYLAMKEDGRLLASKCVTDECFFERLESNNYNTYRSRK 73
OY 111 YTSWYVALKRTGQYKLGSKTGPGRKAILFLPMSAKS 146
DB 74 YTSWYVALKRTGQYKLGSKTGPGRKAILFLPMSAKS 109

RESULT 11

O925A2 PRELIMINARY; PRT; 112 AA.

AC O925A2:
DT 01-DEC-2001 (TREMBLrel. 19, Created)
DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.

OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RA STRAIN=FVB/N;
RA Dirks R.P., Grlep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
expressed in mouse embryos."
RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL: AY027557; AAK52309.1; -
DR InterPro: IPR002209; HB/F_growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; IL1HBGF.
DR ProDom: PD000831; HB/F_growthfact; 1.
DR PROSITE: PS00247; HBGF_FGF; UNKNOWN.1.
SQ SEQUENCE 112 AA; 12725 MW; B00557ABE0257CCB CRC64;

Query Match 61.9%; Score 486; DB 11; Length 112;
Best Local Similarity 97.9%; Pred. No. 4.2e-45;
Matches 93; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

OY 52 KLOLAEEERGVSVIKGCANRYLAMKEDGRLLASKCVTDECFFERLESNNYNTYRSKY 111
DB 18 KLOLAEEERGVSVIKGCANRYLAMKEDGRLLASKCVTDECFFERLESNNYNTYRSKY 77
OY 112 TSWYVALKRTGQYKLGSKTGPGRKAILFLPMSAKS 146
DB 78 TSWYVALKRTGQYKLGSKTGPGRKAILFLPMSAKS 112

RESULT 12
P79706 PRELIMINARY; PRT; 101 AA.

AC P79706:
DT 01-MAY-1997 (TREMBLrel. 03, Created)
DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Basic FGF (Fragment).
OS Cynops pyrrhogaster (Japanese common newt).
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Caudata; Salamandridae; Cynops.
OX NCBI_TaxID=8330;
RN [1]
RP SEQUENCE FROM N.A.
RA TISSUE=EMBRO;
RA Suzuki A.S., Tabata T., Sakaguchi K., Takabatake T., Takeshima K.,
Kaneda T.;
RT "Serial expression of the genes in a mesodermallizing ectoderms of
early Cynops gastrula."
RL Submitted (NOV-1996) to the EMBL/GenBank/DBJ databases.
DR EMBL: D89443; BAA13958.1; -
DR HSSP: P09038; 4FGF.
DR InterPro: IPR002209; HB/F_growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; IL1HBGF.
DR ProDom: PD000831; HB/F_growthfact; 1.
DR SMART: SM00442; FGF; 1.
DR PROSITE: PS00247; HBGF_FGF; 1.
FT NON_TER 1
FT NON_TER 101
FT NON_TER 101
SQ SEQUENCE 101 AA; 11907 MW; 7A16C866C1F457A CRC64;

Query Match 60.6%; Score 476; DB 13; Length 101;
 Best Local Similarity 87.1%; Pred. No. 4.5e-44;
 Matches 88; Conservative 7; Mismatches 6; Indels 0; Gaps 0;

OY 20 PKRLCKNGGFFLRHPDGRVDSREKSDPHIKLOLAERGVSIGVCANRYLAMKED 79
 DB 1 PKRLCKNGGFFLRHPDGRVDSREKSDPHIKLOLAERGVSIGVCANRYLAMKED 60
 OY 80 GRLASKCVTDECEFFERLESNNYTRSRKTSYVAIKR 120
 DB 61 GRLALKWITDECEFFERLESNNYTRSRKTSYVAIKR 101

RESULT 13

ID 007659 PRELIMINARY; PRT; 146 AA.
 AC Q07659;
 DT 01-NOV-1996 (TREMBLrel. 01, Created)
 DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor.
 GN BGF.
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Archaeopteryx; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
 OC Gallus.
 NCBI_TaxID=9031;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=93246053; PubMed=7683281;
 RA Borja A.Z., Zeller R., Meljers C.;
 RT "Expression of alternatively spliced bFGF first coding exons and
 RT antisense mRNAs during chicken embryogenesis.";
 RL Dev. Biol. 157:110-118(1993).
 RN [2]
 RP SEQUENCE OF 52-85 FROM N.A.
 RX MEDLINE=90382254; PubMed=2401202;
 RA Mitrani E., Gruenbaum Y., Shohat H., Ziv T.;
 RT "Fibroblast growth factor during mesoderm induction in the early chick
 RT embryo.";
 RL Development 109:387-393(1990).
 DR EMBL; M95706; AAA48616.1; -;
 DR EMBL; X56804; CAA40139.1; -;
 DR HSSP; P09038; 2BRH.
 DR InterPro; IPR002209; HB/F-growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PRO0262; IL1HBGF.
 DR ProDom; PD000831; HB/F-growthfact. 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 SO SEQUENCE 146 AA; 16182 MW; A7CB97BCB456E247 CRC64;

Query Match 59.7%; Score 468.5; DB 13; Length 146;
 Best Local Similarity 65.8%; Pred. No. 4.7e-43;
 Matches 96; Conservative 8; Mismatches 15; Indels 27; Gaps 2;

OY 1 PALPDGSGGAFPGHFRDPRKLYCKNGGFFLRHPDGRVDSREKSDPHIKLOLAER 60
 DB 28 PSLSPDGV-----LMEVRVRDEVSAM-----VKLOLAER 60
 OY 61 GVSISKYGVCANRYLAMKEDGRLASKCVTDECEFFERLESNNYTRSRKTSYVAIKR 120
 DB 61 GVSISKYGVCANRYLAMKEDGRLASKCVTDECEFFERLESNNYTRSRKTSYVAIKR 120
 OY 121 TGOYKSGTGPGRKAILFLPMSAKS 146
 DB 121 TGOYKSGTGPGRKAILFLPMSAKS 146

RESULT 14

OSMMP4

ID 08MMP4 PRELIMINARY; PRT; 87 AA.

AC 08MMP4;
 DT 01-MAR-2002 (TREMBLrel. 20, Created)
 DT 01-MAR-2002 (TREMBLrel. 20, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2 (Fragment).
 GN FGF2.
 OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 NCBI_TaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX TISSUE-ENDOMETRIUM;
 RA Einspinner R.;
 RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A.
 RX TISSUE-ENDOMETRIUM;
 RA Welter H.;
 RL Thesis (2002), Department of Physiology, University of Munich,
 RL Freising, Germany.
 DR EMBL; AJ319906; CAC86028.1; -;
 DR InterPro; IPR002209; HB/F-growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PRO0262; IL1HBGF.
 DR ProDom; PD000831; HB/F-growthfact. 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
 FT NON_TER 1
 FT NON_TER 87
 SO SEQUENCE 87 AA; 10128 MW; 52382DDF0245739E CRC64;

Query Match 58.2%; Score 457; DB 6; Length 87;
 Best Local Similarity 98.9%; Pred. No. 4.3e-42;
 Matches 86; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

OY 32 LRHPDGRVDSREKSDPHIKLOLAERGVSIGVCANRYLAMKEDGRLASKCVTDE 91
 DB 1 LRHPDGRVDSREKSDPHIKLOLAERGVSIGVCANRYLAMKEDGRLASKCVTDE 60
 OY 92 CFFERLESNNYTRSRKTSYVAIKR 118
 DB 61 CFFERLESNNYTRSRKTSYVAIKR 87

RESULT 15

ID 09NOV2 PRELIMINARY; PRT; 76 AA.
 AC 09NOV2;
 DT 01-OCT-2000 (TREMBLrel. 15, Created)
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (Fragment).
 GN FGF-2.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 CC Bovidae; Caprinae; Ovis.
 NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX TISSUE-FETAL PLACENTAL ARTERY;
 RA Zhang J., Tsol S.C., Magness R.R.;
 RT "Growth factor expression in ovine fetal placental artery endothelial
 RT cells.";
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF250027; AAF65566.1; -;
 DR SGP; P09038; 4FGF.
 DR InterPro; IPR002309; HB/F-growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.

DR PRINTS; PR00262; 11HBGF.
 DR PRODOM; PD000831; HB/E_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 FT NON_TER 1
 FT NON_TER 76
 SQ SEQUENCE 76 AA; 8796 MW; 7D984E2F97453B20 CRC64;

Query Match 43.4%; Score 341; DB 6; Length 76;
 Best Local Similarity 88.0%; Pred. No. 1.4e-29;
 Matches 66; Conservative 1; Mismatches 0; Indels 8; Gaps 1;

QY 48 DPHIKLOLAERGVSVISIKGCANRYLAMKEDGRLASKCYTDCFFPERLESNNYNTYR 107
 Db 1 DPHIKLOLAERGVSVISIKGCANRYLAMKEDGRLASKCYTDCFFPERLESNNYNTYR 60
 QY 108 SRKY-----TSM 114
 Db 61 SRKTSQLYVCGTETNN 75

Search completed: December 4, 2002, 11:12:13
 Job time : 27.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:52:55 ; Search time 32 Seconds
(Without alignments)
645.433 Million cell updates/sec

Title: US-09-886-856-6

Perfect score: 828
Sequence: 1 MAAGSTTTTALPEDGSGA.....GPKTGGOKALFLPMSAKS 155

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

1: /SID52/gcgdata/geneseq/geneseq-emb1/AA1980.DAT.*
2: /SID52/gcgdata/geneseq/geneseq-emb1/AA1981.DAT.*
3: /SID52/gcgdata/geneseq/geneseq-emb1/AA1982.DAT.*
4: /SID52/gcgdata/geneseq/geneseq-emb1/AA1983.DAT.*
5: /SID52/gcgdata/geneseq/geneseq-emb1/AA1984.DAT.*
6: /SID52/gcgdata/geneseq/geneseq-emb1/AA1985.DAT.*
7: /SID52/gcgdata/geneseq/geneseq-emb1/AA1986.DAT.*
8: /SID52/gcgdata/geneseq/geneseq-emb1/AA1987.DAT.*
9: /SID52/gcgdata/geneseq/geneseq-emb1/AA1988.DAT.*
10: /SID52/gcgdata/geneseq/geneseq-emb1/AA1989.DAT.*
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12: /SID52/gcgdata/geneseq/geneseq-emb1/AA1991.DAT.*
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14: /SID52/gcgdata/geneseq/geneseq-emb1/AA1993.DAT.*
15: /SID52/gcgdata/geneseq/geneseq-emb1/AA1994.DAT.*
16: /SID52/gcgdata/geneseq/geneseq-emb1/AA1995.DAT.*
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18: /SID52/gcgdata/geneseq/geneseq-emb1/AA1997.DAT.*
19: /SID52/gcgdata/geneseq/geneseq-emb1/AA1998.DAT.*
20: /SID52/gcgdata/geneseq/geneseq-emb1/AA1999.DAT.*
21: /SID52/gcgdata/geneseq/geneseq-emb1/AA2000.DAT.*
22: /SID52/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*
23: /SID52/gcgdata/geneseq/geneseq-emb1/AA2002.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length DB | ID | Description |
|------------|-------|-------------|-----------|-------------|--------------------|
| 1 | 828 | 100.0 | 155 | 8 AAP70671 | Sequence of bovine |
| 2 | 828 | 100.0 | 155 | 22 AAP1975 | Bovine fibroblast |
| 3 | 828 | 100.0 | 155 | 23 AAP21686 | Bovine fibroblast |
| 4 | 828 | 100.0 | 155 | 23 AAU12080 | Bovine 155 amino a |
| 5 | 825 | 99.6 | 155 | 18 AAM20029 | Recombinant bovine |
| 6 | 817 | 98.7 | 155 | 8 AAP70301 | Sequence of human |
| 7 | 817 | 98.7 | 155 | 10 AAP94038 | Human basic fibrob |
| 8 | 817 | 98.7 | 155 | 11 AAR05314 | Human basic fibrob |
| 9 | 817 | 98.7 | 155 | 13 AAR22232 | bFGF truncated at |
| 10 | 817 | 98.7 | 155 | 14 AAR40159 | Human bFGF peptide |

| | | | | | |
|----|-----|------|-----|-------------|--------------------|
| 11 | 817 | 98.7 | 155 | 16 AAR80777 | Fibroblast growth |
| 12 | 817 | 98.7 | 155 | 16 AAR70204 | Human bFGF. Homo |
| 13 | 817 | 98.7 | 155 | 16 AAR70823 | FGF-2. Homo sapie |
| 14 | 817 | 98.7 | 155 | 18 AAM33338 | Human fibronectin |
| 15 | 817 | 98.7 | 155 | 18 AAM19595 | Biologically activ |
| 16 | 817 | 98.7 | 155 | 19 AAU05456 | Fibronectin recept |
| 17 | 817 | 98.7 | 155 | 19 AAW75712 | Fibroblast growth |
| 18 | 817 | 98.7 | 155 | 19 AAW71379 | 18 kDa form of fib |
| 19 | 817 | 98.7 | 155 | 19 AAW53023 | Fibroblast growth |
| 20 | 817 | 98.7 | 155 | 20 AAM93180 | 18 kD isoform of h |
| 21 | 817 | 98.7 | 155 | 21 AAB10298 | Fibroblast growth |
| 22 | 817 | 98.7 | 155 | 21 AAY96873 | Human fibroblast g |
| 23 | 817 | 98.7 | 155 | 21 AAY96893 | Human fibroblast g |
| 24 | 817 | 98.7 | 155 | 21 AAY90411 | FGF-2 (bFGF). SE |
| 25 | 817 | 98.7 | 155 | 21 AAY90448 | Human FGF-2 (bFGF) |
| 26 | 817 | 98.7 | 155 | 21 AAY32334 | Human fibroblast g |
| 27 | 817 | 98.7 | 155 | 22 AAG65648 | Human fibroblast g |
| 28 | 817 | 98.7 | 155 | 22 AAE11976 | Human fibroblast g |
| 29 | 817 | 98.7 | 155 | 22 AAB85813 | Human fibroblast g |
| 30 | 817 | 98.7 | 155 | 22 AAB99918 | Human FGF-2 protei |
| 31 | 817 | 98.7 | 155 | 22 AAG64317 | Human FGF-2 protei |
| 32 | 817 | 98.7 | 155 | 22 AAG64847 | Heart muscle cell |
| 33 | 817 | 98.7 | 155 | 22 AAB84597 | Amino acid sequenc |
| 34 | 817 | 98.7 | 155 | 22 AAY72909 | Truncated form of |
| 35 | 817 | 98.7 | 155 | 22 AAB61662 | FGF2 protein. Hom |
| 36 | 817 | 98.7 | 155 | 22 AAB50274 | Human basic fibrob |
| 37 | 817 | 98.7 | 155 | 23 ABB83825 | Human bFGF related |
| 38 | 817 | 98.7 | 155 | 23 AAE21685 | Human fibroblast g |
| 39 | 817 | 98.7 | 155 | 23 AAE18807 | Human FGF-2 protei |
| 40 | 817 | 98.7 | 155 | 23 AAU12081 | Human 155 amino ac |
| 41 | 817 | 98.7 | 155 | 23 AAU11111 | Human fibroblast g |
| 42 | 817 | 98.7 | 157 | 8 AAP71085 | Sequence of human |
| 43 | 817 | 98.7 | 158 | 18 AAW31664 | Leaderless protein |
| 44 | 817 | 98.7 | 158 | 22 AAU08594 | Human basic fibrob |
| 45 | 817 | 98.7 | 158 | 22 AAG78316 | Human basic fibrob |

ALIGNMENTS

RESULT 1

AAU70671 standard; Protein; 155 AA.

XX AAP70671:

AC AAP70671:

XX 18-APR-1991 (first entry)

DT Sequence of bovine basic fibroblast growth factor (bFGF).

DE Wound healing; tissue repair; tumour probe.

XX Bos taurus.

OS Bos taurus.

XX Key

FT Peptide

FT Protein

XX Location/Qualifiers

XX 1..9

XX 10..155

XX MO8701728-A.

XX 26-MAR-1987.

XX 11-SEP-1986; 86WO-US01879.

XX 30-MAY-1986; 86US-0869382.

XX 12-SEP-1985; 85US-0775521.

XX 16-DEC-1985; 85US-0809163.

XX (BIOT-) BIOTECHN RES PARTNE.

XX Fiddes JC, Abraham JA.

XX WPI, 1987-093786/13.

DR N-PSDB; AAN71024.
 XX New DNA sequences encoding mammalian fibroblast growth factors -
 PT useful in prodn. of pure factors for use in wound healing and
 PT tissue repair and of probe for tumour testing
 XX
 PS Claim 11; Fig 3; 89pp; English.
 CC The N-terminal AA sequence of both acidic and basic bovine FGF are
 CC used to construct long probes to screen human and bovine genomic
 CC libraries for FGF genes. Isolated sequences are used in vector
 CC construction etc. and used to transform CV-1 cells for FGF prodn.
 CC
 XX Sequence 155 AA;
 SO
 Query Match 100.0%; Score 828; DB 8; Length 155;
 Best Local Similarity 100.0%; Pred. No. 1,1e-82;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITLTPALPEDGSGAPPGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 DB 1 MAAGSITLTPALPEDGSGAPPGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 QY 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRKY 120
 DB 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRKY 120
 QY 121 SSMVYALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 SSMVYALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 RESULT 2
 ID AAE11975 standard; Protein; 155 AA.
 XX AAE11975;
 AC AAE11975;
 DT 18-DEC-2001 (first entry)
 XX
 DE Bovine fibroblast growth factor-2 (FGF-2) #2.
 XX
 KW Bovine; therapy; erectile dysfunction; fibroblast growth factor-2; FGF-2;
 KW epidermal growth factor; EGF; platelet derived growth factor; PDGF;
 KW vascular endothelial growth factor; VEGF; tissue growth factor; TGF;
 KW impotence; vasotrophic.
 XX
 OS Bos taurus.
 XX
 MO200168125-A2.
 XX
 PN 20-SEP-2001.
 XX
 PF 09-MAR-2001; 2001WO-US07702.
 XX
 PR 10-MAR-2000; 2000US-188480P.
 PR 11-MAY-2000; 2000US-203415P.
 XX
 PA (CHIR) CHIRON CORP.
 XX
 PI Whitehouse NJ;
 XX
 DR WPI; 2001-616273/71.
 DR N-PSDB; AAD19522.
 XX
 PT Treating or preventing erectile dysfunction, comprises administering
 PT growth factor, particularly fibroblast growth factor to blood vessels
 PT in the penis, groin or leg
 XX
 PS Claim 6; Page 33; 35pp; English.
 CC The present invention relates to a method for treating or preventing
 CC erectile dysfunction, comprising administering a fibroblast growth

CC factor (FGF), epidermal growth factor (EGF), platelet derived growth
 CC factor (PDGF), vascular endothelial growth factor (VEGF) or tissue
 CC growth factor (TGF). The invention is used to treat or prevent erectile
 CC dysfunction, or impotence. The present sequence is a bovine FGF-2
 CC protein.
 XX
 SO Sequence 155 AA;
 Query Match 100.0%; Score 828; DB 22; Length 155;
 Best Local Similarity 100.0%; Pred. No. 1,1e-82;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITLTPALPEDGSGAPPGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 DB 1 MAAGSITLTPALPEDGSGAPPGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 QY 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRKY 120
 DB 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRKY 120
 QY 121 SSMVYALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 SSMVYALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 RESULT 3
 ID AAE21686 standard; Protein; 155 AA.
 XX AAE21686;
 AC AAE21686;
 DT 16-JUL-2002 (first entry)
 XX
 DE Bovine fibroblast growth factor-2 (FGF-2) protein.
 XX
 KW Bovine; pharmaceutical composition; fibroblast growth factor; FGF;
 KW tissue regeneration; therapy; wound; ischaemic heart disease; stroke;
 KW bone fracture healing; vulnerary; cerebroprotective; vasotrophic.
 XX
 OS Bos taurus.
 XX
 FH Key Location/Qualifiers
 FH Binding-site 27..31
 FT Binding-site /note= "Heparin binding site"
 FT Binding-site 45..48
 FT Binding-site /note= "Cell binding site"
 FT Binding-site 86..90
 FT Binding-site /note= "Cell binding site"
 FT Binding-site 116..120
 FT Binding-site /note= "Heparin binding site"
 XX
 PN WO200217956-A2.
 XX
 PD 07-MAR-2002.
 XX
 PF 31-AUG-2001; 2001WO-US27209.
 XX
 PR 31-AUG-2000; 2000US-229238P.
 XX
 PA (CHIR) CHIRON CORP.
 XX
 PI Hageman RV, Shirley BA, Bajwa KK;
 XX
 DR WPI; 2002-329732/36.
 DR N-PSDB; AAD34057.
 XX
 PT Stabilized pharmaceutical composition comprising fibroblast growth
 PT factor or its variant, and reducing agent to inhibit oxidation of
 PT fibroblast growth factor, useful for promoting wound healing and
 PT treating stroke
 XX
 PS Disclosure; Page 48; 52pp; English.
 CC

CC The invention relates to pharmaceutical composition comprising stabilised
 CC fibroblast growth factor (FGF) or its variant. Methods for increasing
 CC storage stability of FGF or its variant in a liquid or lyophilised
 CC composition is also provided. The method is useful for increasing storage
 CC stability of a pharmaceutical composition comprising FGF or its variant
 CC which becomes oxidised during storage. The pharmaceutical composition is
 CC useful for promoting tissue regeneration, treating wounds, ischaemic
 CC heart diseases, stroke and is used for bone fracture healing. The present
 CC sequence is bovine FGF-2 protein.

CC Sequence, 155 AA;

CC Query Match 100.0%; Score 828; DB 23; Length 155;

CC Best Local Similarity 100.0%; Pred. No. 1,1e-82;
 CC Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITLPLPEDGSGAPPFGHFKDPKRLYCNGGFFLRHDPDGVGVREKSDPHI 60
 DB 1 MAAGSITLPLPEDGSGAPPFGHFKDPKRLYCNGGFFLRHDPDGVGVREKSDPHI 60

QY 61 KLQLAERGVVSIKGVCANRYLAKMEDGRLLASCVTDECFEFLRLSNNTYRSRY 120
 DB 61 KLQLAERGVVSIKGVCANRYLAKMEDGRLLASCVTDECFEFLRLSNNTYRSRY 120

QY 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155

RESULT 4

ID AAU12080 standard; Protein; 155 AA.

AAU12080;

DT 09-APR-2002 (first entry)

XX Bovine 155 amino acid fibroblast growth factor-2 (FGF-2) protein.

XX Bovine; peripheral artery disease; PAD; fibroblast growth factor-2;

XX FGF-2; peak walking time; ankle brachial index; body pain;

XX stair climbing ability; claudication; critical limb ischaemia; stroke;

XX cardiovascular disorder; diabetes; dyslipidaemia; hypertension.

XX Bos taurus.

XX WO200198346-A2.

PD 27-DEC-2001.

PF 22-JUN-2001; 2001WO-US19978.

PR 22-JUN-2000; 2000US-213504P.

PR 26-JAN-2001; 2001US-264572P.

PR 16-MAR-2001; 2001US-276549P.

PR 21-JUN-2001; 2001US-0886856.

XX (CHIR) CHIRON CORP.

XX Whitehouse MJ;

XX WPI; 2002-147794/19.

XX N-PSDB; AAS20935.

XX Treating peripheral artery disease, for improving peak walking time and

XX ankle brachial index with intermittent claudication in a patient,

XX comprises administering fibroblast growth factor in two doses at one

CC growth factor-2 (FGF-2) to a patient in two doses, where a single dose
 CC is administered into each leg of the patient within a one hour period.
 CC FGF-2 is useful for treating peripheral artery disease, improving
 CC peak walking time with intermittent claudication, improving ankle
 CC brachial index with intermittent claudication, reducing body pain,
 CC improving stair climbing ability and reducing the severity of the
 CC claudication. FGF-2 is also useful for treating or preventing
 CC peripheral artery disease (PAD) including claudication and critical
 CC limb ischaemia, and even those suffering from a wide spectrum of related
 CC clinical ailments including coronary artery disease (CAD), myocardial
 CC infarctions, stroke, diabetes, dyslipidaemias, hypertension and patients
 CC who have had surgical or catheter-based revascularisations. The present
 CC sequence represents bovine 155 amino acid FGF-2 protein.

CC Sequence 155 AA;

CC Query Match 100.0%; Score 828; DB 23; Length 155;

CC Best Local Similarity 100.0%; Pred. No. 1,1e-82;
 CC Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITLPLPEDGSGAPPFGHFKDPKRLYCNGGFFLRHDPDGVGVREKSDPHI 60
 DB 1 MAAGSITLPLPEDGSGAPPFGHFKDPKRLYCNGGFFLRHDPDGVGVREKSDPHI 60

QY 61 KLQLAERGVVSIKGVCANRYLAKMEDGRLLASCVTDECFEFLRLSNNTYRSRY 120
 DB 61 KLQLAERGVVSIKGVCANRYLAKMEDGRLLASCVTDECFEFLRLSNNTYRSRY 120

QY 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155

RESULT 5

ID AAW20029 standard; Protein; 155 AA.

AAW20029;

DT 18-SEP-1997 (first entry)

XX Recombinant bovine basic fibroblast growth factor.

XX FGF: fibroblast growth factor; basic; acidic; wound healing;

XX neurodegenerative disease; Parkinson's; Alzheimer's disease;

XX bone fracture; biologically active; embolism.

XX Bos taurus.

XX OS

XX FH

XX FT

XX FT

XX FT

XX FT

XX PN

XX US5604293-A.

XX 18-FEB-1997.

XX 12-SEP-1985;

XX 15-MAY-1987;

XX 12-SEP-1985;

XX 16-DEC-1985;

XX 30-MAY-1986;

XX 01-APR-1994;

XX (SCIO-) SCIOS INC.

XX Abraham JA, Fiddes JC;

XX WPI; 1997-234676/21.

DR N-PSDB; AAT71236.
 XX New high purity, recombinant human basic fibroblast growth factor -
 PT for promoting wound healing and treating neurodegenerative
 PT diseases, suitable for production on large scale
 XX
 PS Example 5; Fig 3; 34p; English.
 XX
 CC AAW20029 is a recombinant bovine basic fibroblast growth factor (bFGF).
 CC Recombinant bFGF is used to promote healing of wounds, bone fractures,
 CC damaged myocardial tissue etc. and, since it increases neuronal
 CC survival and promotes neurite outgrowth, may also be used in treatment
 CC of neurological disorders such as Alzheimer's and Parkinson's diseases.
 CC bFGF may also be used for detection of specific inhibitors; for
 CC treatment of cell cultures in vitro before transplant and for inducing
 CC release of tissue plasminogen activator or collagenase, e.g. for
 CC treatment of a chronic tendency to form embolism. Recombinant bFGF can
 CC be produced on a large scale.
 CC
 SO Sequence 155 AA;
 XX
 Query Match 99.6%; Score 825; DB 18; Length 155;
 Best Local Similarity 99.4%; Pred. No. 2.4e-82;
 Matches 154; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPLPBDGSGAFPPGHFKDPKRLCYKNGGFRLRHPDGRVDGVRKSDPHI 60
 Db 1 MASSITTLPLPBDGSGAFPPGHFKDPKRLCYKNGGFRLRHPDGRVDGVRKSDPHI 60
 QY 61 KLOQAEEERGVSIGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
 Db 61 KLOQAEEERGVSIGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
 QY 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
 Db 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
 RESULT 6
 AAP70301
 ID AAP70301 standard; Protein; 155 AA.
 XX
 AC AAP70301;
 XX
 DT 05-JUN-1991 (first entry)
 XX
 DE Sequence of human basic fibroblast growth factor (hbFGF).
 XX
 KW Fibroblast growth promoter; mesoderm cell growth promoter;
 KW wound healing.
 XX
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..9
 FT Protein 10..155
 FT /note="claimed"
 XX
 EP237966-A.
 PN
 PD 23-SEP-1987.
 XX
 PF 12-MAR-1987; 87EP-0103601.
 XX
 PR 29-SEP-1986; 86JP-0231428.
 PR 14-MAR-1986; 86JP-0057919.
 PR 09-APR-1986; 86JP-0082699.
 PR 09-OCT-1986; 86JP-0241053.
 XX
 PA (TAKE) TAKEDA CHEMICAL IND KK.
 PI Kurokawa T, Sasada R, Iwane M, Igarashi K;
 XX

DR WPI; 1987-265363/38.
 DR N-PSDB; AAN70494.
 XX Human basic fibroblast growth factor - produced by recombinant
 PT DNA techniques, useful for healing wounds, prophylaxis,
 PT thrombosis and arteriosclerosis treatment, etc.
 XX
 PS Disclosure; Fig 1; 38p; English.
 XX
 CC hbFGF is produced using cDNA prepd. from RNA isolated from M138 or
 CC IMR90 human fibroblasts. hbFGF promotes growth of fibroblasts and
 CC other mesoderm-derived cells and is useful for promoting healing of
 CC wounds (eg burns), for prophylaxis and treatment of thrombosis and
 CC arteriosclerosis, and as a promoter for cell culture.
 CC
 SO Sequence 155 AA;
 XX
 Query Match 98.7%; Score 817; DB 8; Length 155;
 Best Local Similarity 98.7%; Pred. No. 1.8e-81;
 Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPLPBDGSGAFPPGHFKDPKRLCYKNGGFRLRHPDGRVDGVRKSDPHI 60
 Db 1 MAAGSITTLPLPBDGSGAFPPGHFKDPKRLCYKNGGFRLRHPDGRVDGVRKSDPHI 60
 QY 61 KLOQAEEERGVSIGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
 Db 61 KLOQAEEERGVSIGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
 QY 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
 Db 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 7
 AAP94038
 ID AAP94038 standard; protein; 155 AA.
 XX
 AC AAP94038;
 XX
 DT 25-JUN-1990 (first entry)
 XX
 DE Human basic fibroblast growth factor.
 XX
 KW Basic fibroblast growth factor; pUC9-TSFl1; pUC9delH3-PTSF-3.
 XX
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 78
 FT /label=Cys
 FT /note="replaced by Ser or Ala"
 FT Misc-difference 96
 FT /label=Cys
 FT /note="replaced by Ser or Ala"
 FT Misc-difference 128
 FT /label=Lys
 FT /note="replaced by Ser or Glu"
 FT Misc-difference 129
 FT /label=Arg
 FT /note="replaced by Thr"
 FT Misc-difference 138
 FT /label=Lys
 FT /note="replaced by Ser"
 FT 128..138
 FT /label=heparin-binding domain
 XX
 EP298723-A.
 PN
 PD 11-JAN-1989.
 XX
 PF 06-JUL-1988; 88EP-0306158.
 XX

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PR 07-JUL-1987; 87US-0070797.
XX (BIOT-) BIOTECHN RES ASSOC.
XX
XX PI Fildes JC, Abraham JA, Protter A;
XX
XX WPI; 1989-009785/02.
DR N-PSDB; AAN93087.
XX
XX Recombinant DNA encoding new fibroblast growth factor
PT analogues - useful eg for accelerating wound healing and
PT to control neovascularisation.
XX
XX Disclosure; d 1-2; 44pp; English.
XX
XX DNA encoding the sequence may be mutated to encode an analogue, of human
CC basic fibroblast growth factor (bFGF) bFGF-C78/968, which has reduced
CC affinity for heparin. One or more positively-charged AAs in the heparin-
CC binding domain (AAs 128-138) are replaced by neutral or negatively-
CC charged residues as indicated in the feature table. A recombinant vector
CC (pUC9-TSFl1 or pUC9delH3-PTSf-3) contg. the mutated DNA can be used to
CC transform bacterial or mammalian host cells for prodn. of the analogue.
XX See also AAP94038.
XX
SQ Sequence 155 AA;
Query Match 98.7%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 1.8e-81;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYCKNGGFLLRIHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYCKNGGFLLRIHPDGRVGVREKSDPHI 60
QY 61 KLQLQAEERGVVSIKGYCANRYLAMKEDGRLLASKCVTDECFFPERLSNNNTYRSRKY 120
DB 61 KLQLQAEERGVVSIKGYCANRYLAMKEDGRLLASKCVTDECFFPERLSNNNTYRSRKY 120
QY 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 8
AAR05314
ID AAR05314 standard; protein; 155 AA.
XX
XX AAR05314;
XX
XX 10-OCT-1990 (first entry)
XX
XX Human basic fibroblast growth factor (FGF).
XX
XX Fibroblast growth factor; FGF; yeast; ischaemia; ds.
XX
XX Synthetic.
XX
XX WO9005184-A.
XX
XX 17-MAY-1990.
XX
XX 03-NOV-1989; 89WO-0004821.
XX
XX 04-NOV-1988; 88US-0267408.
XX
XX (CHIR-) CHIRON CORP.
XX
XX Barr PJ;
XX
XX WPI; 1990-178825/23.
XX
XX N-PSDB; AAQ04716.
XX
XX Yeast prodn. of human basic and acidic fibroblast growth factor -

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PT with acetylated amino-terminal, useful eg. for treating cell
PT senescence, neuronal regression and cell death.
XX
XX Disclosure; ; p; English.
XX
XX FGF have applications such as in vivo nerve regeneration, wound
CC repair ischaemia and corneal repair. They may also have therapeutic
CC uses in the CNS and PNS in treatment of cell death and neuronal
CC regression.
XX
XX
SQ Sequence 155 AA;
Query Match 98.7%; Score 817; DB 11; Length 155;
Best Local Similarity 98.7%; Pred. No. 1.8e-81;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYCKNGGFLLRIHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYCKNGGFLLRIHPDGRVGVREKSDPHI 60
QY 61 KLQLQAEERGVVSIKGYCANRYLAMKEDGRLLASKCVTDECFFPERLSNNNTYRSRKY 120
DB 61 KLQLQAEERGVVSIKGYCANRYLAMKEDGRLLASKCVTDECFFPERLSNNNTYRSRKY 120
QY 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 9
AAR22232
ID AAR22232 standard; protein; 155 AA.
XX
XX AAR22232;
XX
XX 23-JUN-1992 (first entry)
XX
XX bFGF truncated at its N-terminus.
XX
XX Basic fibroblast growth factor; adduct; heparin; heparan sulphate;
XX pepsin A; cathepsin D; wounds; burns.
XX
XX Synthetic.
XX
XX WO9202539-A.
XX
XX 20-FEB-1992.
XX
XX 30-JUL-1991; 91WO-EP01428.
XX
XX 02-AUG-1990; 90GB-0017008.
XX
XX (FARM ) FARMITALIA C.ERBA SRL.
XX
XX Monsan P, Paul F, Belbeder D, Sarmientos P;
XX
XX WPI; 1992-080021/10.
XX
XX Prepn. of basic fibroblast growth factor - by forming adduct with
PT heparin or heparan sulphate and cleaning with pepsin A or
PT cathepsin D
XX
XX Claim 4; Page 27; 36pp; English.
XX
XX The peptide sequence was deduced from the synthetic DNA sequence
CC prep'd. as described in EP-363675. E. coli cells transformed with the
CC synthetic DNA were lysed and the supernatant purified, giving a
CC 50:50 mixture of a 154 residue bFGF (2-155) having the amino acid
CC sequence of the 155 residue form (Abraham et al., Science, 233, 545-
CC 548, 1986) shown here but without the N-terminal Met; and a 153
CC residue bFGF (3-155). An adduct of bFGF formed with heparin or
CC heparan sulphate contg. the bFGF 9-10 leu-pro bond can be cleaved
CC with pepsin A or cathepsin D to cleave this bond and release a

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peptide with the N-terminus be deleted up to and including residue 9, sequentially. This cleavage method can be used to obtain a pure form of the 146 amino acid bFGF (10-155) bFGF. The prod. can be used to treat wounds and burns.
See also AAR22233.

Sequence 155 AA;

Query Match 98.7%; Score 817; DB 13; Length 155;
Best Local Similarity 98.7%; Pred. No. 1.8e-81;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPPGHFDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHI 60
QY 61 KLOQAERGVVSIKVCANRYLAMKEDGRLLASKCVTDCFFPERLESNNNTYRSRY 120
DB 61 KLOQAERGVVSIKVCANRYLAMKEDGRLLASKCVTDCFFPERLESNNNTYRSRY 120
QY 121 SSWVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 10

AAR40159
ID AAR40159 standard; peptide; 155 AA.

AC AAR40159;

DT 07-FEB-1994 (first entry)

DE Human bFGF peptide fragment #1.

XX Human; fibronectin; FN; fibroblast cell growth factor; FGF;

KM fusion; cell adhesion; cell growth; anti-aging; cosmetics;

KW wound healing; surgery.

XX Homo sapiens.

XX JP05178897-A.

XX 20-JUL-1993.

XX 05-MAR-1992; 92JP-0083220.

XX 14-OCT-1991; 91JP-0291959.

XX (TAKI) TAKARA SHUZO CO LTD.

XX WPI; 1993-261656/33.

XX N-PSDB; AAQ46943.

XX Synthetic functional polypeptide to promote wound healing, etc.

XX growth factor polypeptide, opt. linked by spacer

XX Disclosure; Page 7; 13pp; Japanese.

XX The sequences given in AAR40158-63 represent human fibronectin (FN)

XX and fibroblast cell growth factor (FGF) fragments which were used in

XX the production of fusion polypeptides which are able to stimulate

XX cell adhesion and cell growth. These fusion peptides may be used

XX for anti-aging cosmetics and in wound healing after surgery.

XX Sequence 155 AA;

QY Query Match 98.7%; Score 817; DB 14; Length 155;
Best Local Similarity 98.7%; Pred. No. 1.8e-81;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHI 60

DB 1 MAAGSITTLPALPEDGSGAFPPGHFDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHI 60

QY 61 KLOQAERGVVSIKVCANRYLAMKEDGRLLASKCVTDCFFPERLESNNNTYRSRY 120

DB 61 KLOQAERGVVSIKVCANRYLAMKEDGRLLASKCVTDCFFPERLESNNNTYRSRY 120

QY 121 SSWVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 121 TSWVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 11

AAR80777
ID AAR80777 standard; Protein; 155 AA.

AC AAR80777;

DT 13-MAY-1996 (first entry)

DE Fibroblast growth factor 2, FGF-2.

XX Conjugate; fibroblast growth factor; FGF; cytotoxin; sapotin; eye;

KM cell proliferation; regulation; pterygia; corneal clouding; cancer;

KW psoriasis; rheumatoid arthritis.

XX Homo sapiens.

XX W09524928-A2.

XX 21-SEP-1995.

XX 15-MAR-1995; 95WO-US03448.

XX 15-MAR-1994; 94US-0213447.

XX 15-MAR-1994; 94US-0213446.

XX (PRIZ-) PRIZM PHARM INC.

XX Baird JA, Houston LL, Nova MP, Sosnowski BA;

XX WPI; 1995-336820/43.

XX Claim 33; Page 141; 204pp; English.

XX AAR80776-84 are fibroblast growth factors (FGF) FGF-1 to FGF-9

XX respectively. DNA encoding these fibroblast growth factors can be

XX used to create an FGF/sapotin fusion protein. DNA encoding such fusion

XX proteins are useful for targeting sapotin (a cytotoxin) to a cell

XX carrying the FGF receptor. Targeted agents (TA) other than sapotin

XX which may be used include in partic. DNA encoding a therapeutic protein,

XX antisense DNA or other cytotoxic agent. The linker sequence within the

XX fusion protein may increase serum stability or intracellular

XX availability of the TA. The conjugates of the invention are used to

XX inhibit cell proliferation in cells carrying the particular growth

XX factor receptor; also when TA is DNA it can be used to deliver this

XX to cells (for gene therapy). A specific application is to prevent

XX keratinocytes in the anterior eye after surgery, partic. to prevent

XX recurrence of pterygii after surgical removal, closure of

XX trabeculotomy after glaucoma surgery and corneal clouding after

XX excimer laser treatment. Other conditions which may be treated include

XX tumors, restenosis, psoriasis, Dupuytren's contracture, diabetic

XX complications, Kaposi's sarcoma and rheumatoid arthritis.

XX Sequence 155 AA;

QY Query Match 98.7%; Score 817; DB 15; Length 155;
Best Local Similarity 98.7%; Pred. No. 1.8e-81;

Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 QY 61 KLQLOAEEERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
 DB 61 KLQLOAEEERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
 QY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 12

AAR70204
 ID AAR70204 standard; Protein; 155 AA.

AC AAR70204;

DT 21-SEP-1995 (first entry)

DE Human bFGF.

XX Basic fibroblast growth factor; bFGF; blood-brain barrier;

KM neuronal precursor cell; neurological agent.

XX Homo sapiens.

OS W05507092-A.

XX 16-MAR-1995.

PD 11-AUG-1994; 94WO-US09155.

XX 10-SEP-1993; 93US-0118822.

PR 22-DEC-1993; 93US-0171297.

XX (UYNE-) UNIV NEW JERSEY.

XX Black IB, Dicloco-Bloom E;

XX WPI; 1995-123234/16.

DR N-PSDB; AAQ83522.

XX New conjugates for crossing the blood brain barrier - comprising

PT a neurological agent linked to a transport factor comprising at

PI least a portion of a growth factor

XX Disclosure; Fig.1; 53pp; English.

CC Growth and/or proliferation of neuronal precursor cells in an animal

CC is obtained by admin. of a proliferation factor comprising at least

CC a portion of a growth factor, e.g. human basic fibroblast growth

CC factor, whose sequence is given in AAR70204 and gene in AAQ83522.

XX Sequence 155 AA;

Query Match 98.7%; Score 817; DB 16; Length 155;

Best Local Similarity 98.7%; Pred. No. 1.8e-81;

Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 QY 61 KLQLOAEEERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
 DB 61 KLQLOAEEERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
 QY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

DB 121 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 13

AAR70823
 ID AAR70823 standard; protein; 155 AA.

AC AAR70823;

DT 01-SEP-1995 (first entry)

DE FGF-2.

XX FGF-2; fibroblast growth factor; cytotoxic conjugate; fusion protein;

KM saporin; cytostatic; tumor; diabetes; rheumatoid arthritis.

XX Homo sapiens.

OS W05503831-A.

XX 09-FEB-1995.

XX 27-JUL-1994; 94WO-US08511.

XX 02-AUG-1993; 93US-0099924.

PR 29-OCT-1993; 93US-0145829.

XX (PRIZ-) PRIZM PHARM INC.

XX (WHIT-) WHITTIER INST DIABETES & ENDOCRINOLOGY.

XX Baird AJ, Lappl DA, Sosnowski BA;

XX WPI; 1995-082038/11.

XX New monogenous preparations of cytotoxic conjugates and DNA -

XX contain fibroblast growth factors and cytotoxic agents for

XX treating FGF conditions such as tumours, diabetes and rheumatoid

XX arthritis.

XX Disclosure; Page 109-110; 128pp; English.

XX Novel fusion proteins comprise FGF linked to saporin. FGF-1 to -9

XX may be used, pref. mutants in which at least 1 Cys residue is

XX replaced by conservative Ser substitutions. The fusion proteins

XX are potent cycloidal agents to cells bearing the FGF receptor.

XX Sequence 155 AA;

Query Match 98.7%; Score 817; DB 16; Length 155;

Best Local Similarity 98.7%; Pred. No. 1.8e-81;

Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 QY 61 KLQLOAEEERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
 DB 61 KLQLOAEEERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
 QY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 14

AAW33338
 ID AAW33338 standard; protein; 155 AA.

XX AAW33338;

DT 23-FEB-1998 (first entry)

XX

DE Human fibronectin amino-terminal oligopeptide.
 XX Amino-terminal; human fibronectin; target cell;
 KM transfection; retroviral vector; gene therapy; cancer;
 XX viral disease; acquired immunodeficiency syndrome; AIDS.
 OS Homo sapiens.
 XX
 XX MO9718318-A1.
 XX
 XX
 PD 22-MAY-1997.
 XX
 XX 07-NOV-1996; 96WO-0P03254.
 XX
 XX 08-MAR-1996; 96JP-0051847.
 PR 13-NOV-1995; 95JP-0294382.
 XX
 XX (TAKI) TAKARA SHUZO CO LTD.
 XX
 PI Asada K, Hashino K, Kato I, Koyama N, Uemori T;
 PI Ueno T;
 DR WPI, 1997-289294/26.
 XX
 PT Method for increasing efficacy of gene transfer to target cell using
 PT retrovirus - by infection of the target cell in the presence of a
 PT substance which binds to the virus and a substance which binds to
 PT the target cell
 PS Claim 4; Pages 93-94; 194pp; Japanese.
 XX
 XX The present sequence is a human fibronectin amino-terminal
 CC oligopeptide, which was used in the development of a novel method
 CC for increasing the efficiency of gene introduction into a target
 CC cell using a retroviral vector. The method comprises carrying out
 CC viral infection of the target cell in the presence of a retrovirus
 CC and target cell binding substance or substances. The method can be
 CC used to effectively introduce genes into target cells for the gene
 CC therapy of cancer and viral diseases, e.g. AIDS.
 XX
 SQ Sequence 155 AA;
 Query Match 98.7%; Score 817; DB 18; Length 155;
 Best Local Similarity 98.7%; Pred. No. 1.8e-81;
 Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPDDGGSGAFPFGHFKDPKRLYCKNGGFLRHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPDDGGSGAFPFGHFKDPKRLYCKNGGFLRHPDGRVDGVRKSDPHI 60
 QY 61 KLOQAEEERGVSISKVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 DB 61 KLOQAEEERGVSISKVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 QY 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 15
 ID AAM19595 standard; Protein; 155 AA.
 XX
 XX AAM19595;
 XX
 DT 18-SEP-1997 (first entry)
 XX
 XX Biologically active recombinant basic fibroblast growth factor.
 DE FGF; fibroblast growth factor; basic; acidic; wound healing;
 KM neurodegenerative disease; Parkinson's; Alzheimer's disease;
 KM bone fracture; biologically active; embolism.
 XX

OS Homo sapiens.
 XX
 XX Key Location/Qualifiers
 FT Peptide 1..9
 FT Protein /label= sig_peptide
 FT 10..155
 FT /label= mac_protein
 XX
 XX US5604293-A.
 XX
 XX 18-FEB-1997.
 PD
 XX 12-SEP-1985; 85US-0775521.
 XX
 XX 15-MAY-1987; 87US-0050706.
 PR 12-SEP-1985; 85US-0775521.
 PR 16-DEC-1985; 85US-0809163.
 PR 30-MAY-1986; 86US-0869382.
 PR 30-MAR-1992; 92US-0860688.
 PR 01-APR-1994; 94US-0221462.
 XX
 XX (SCIO-) SCIOS INC.
 XX
 PI Abraham JA, Fiddes JC;
 DR WPI, 1997-234676/21.
 DR N-PSDB; AAT71231.
 XX
 PT New high purity, recombinant human basic fibroblast growth factor -
 PT for promoting wound healing and treating neurodegenerative
 PT diseases, suitable for production on large scale
 PS Claim 2; Fig 4; 34pp; English.
 XX
 XX AAM19595 is a biologically active recombinant human basic fibroblast
 CC growth factor (bFGF). The protein is free from all infectious
 CC impurities, substances that normally accompany it and from
 CC post-translational modification of Cys residues of native human bFGF.
 CC Recombinant bFGF is used to promote healing of wounds, bone fractures,
 CC damaged myocardial tissue etc. and, since it increases neuronal survival
 CC and promotes neurite outgrowth, may also be used in treatment of
 CC neurological disorders such as Alzheimer's and Parkinson's diseases. bFGF
 CC may also be used for detection of specific inhibitors, for treatment of
 CC cell cultures in vitro before transplant and for inducing release of
 CC tissue plasminogen activator or collagenase, e.g. for treatment of a
 CC chronic tendency to form embolism. Recombinant bFGF can be produced on a
 CC large scale.
 XX
 SQ Sequence 155 AA;
 Query Match 98.7%; Score 817; DB 18; Length 155;
 Best Local Similarity 98.7%; Pred. No. 1.8e-81;
 Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPDDGGSGAFPFGHFKDPKRLYCKNGGFLRHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPDDGGSGAFPFGHFKDPKRLYCKNGGFLRHPDGRVDGVRKSDPHI 60
 QY 61 KLOQAEEERGVSISKVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 DB 61 KLOQAEEERGVSISKVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 QY 121 SSWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
 DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 Search completed: December 16, 2002, 17:55:35
 Job time : 34 secs

GenCore version 5.1.3
Copyright (c) 1993 - 2002 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: December 16, 2002, 17:55:41 ; Search time 11.5 Seconds
(without alignments)

396,570 Million cell updates/sec

Title: US-09-886-856-6

Perfect score: 828

Sequence: 1 MAAGSITTLPALPEDGSGA.....GPKTGPQKALFLPMASKS 155

Scoring table: BLOSUM62

Gapop 10.0, Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA:*

- 1: /cg2_6/prodata/1/1aa/5A_COMB.pep:*
- 2: /cg2_6/prodata/1/1aa/5B_COMB.pep:*
- 3: /cg2_6/prodata/1/1aa/5A_COMB.pep:*
- 4: /cg2_6/prodata/1/1aa/5B_COMB.pep:*
- 5: /cg2_6/prodata/1/1aa/PCTUS_COMB.pep:*
- 6: /cg2_6/prodata/1/1aa/backfill601.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|---------------------|--------------------|
| 1 | 828 | 100.0 | 155 | 5 PCT-US91-02186-4 | Sequence 4, Appl1 |
| 2 | 828 | 100.0 | 155 | 5 5514566-6 | Patent No. 5514566 |
| 3 | 817 | 98.7 | 155 | 1 US-07-959-369-6 | Sequence 6, Appl1 |
| 4 | 817 | 98.7 | 155 | 1 US-07-842-177A-1 | Sequence 1, Appl1 |
| 5 | 817 | 98.7 | 155 | 1 US-08-439-725A-10 | Sequence 10, Appl1 |
| 6 | 817 | 98.7 | 155 | 1 US-08-325-632-1 | Sequence 1, Appl1 |
| 7 | 817 | 98.7 | 155 | 1 US-08-462-169B-10 | Sequence 10, Appl1 |
| 8 | 817 | 98.7 | 155 | 2 US-08-867-471-10 | Sequence 10, Appl1 |
| 9 | 817 | 98.7 | 155 | 2 US-08-438-439C-14 | Sequence 14, Appl1 |
| 10 | 817 | 98.7 | 155 | 2 US-08-951-822-28 | Sequence 28, Appl1 |
| 11 | 817 | 98.7 | 155 | 3 US-09-103-079-10 | Sequence 10, Appl1 |
| 12 | 817 | 98.7 | 155 | 3 US-08-705-445-6 | Sequence 6, Appl1 |
| 13 | 817 | 98.7 | 155 | 3 US-08-897-924A-25 | Sequence 25, Appl1 |
| 14 | 817 | 98.7 | 155 | 3 US-08-718-904-11 | Sequence 11, Appl1 |
| 15 | 817 | 98.7 | 155 | 3 US-09-023-082A-17 | Sequence 17, Appl1 |
| 16 | 817 | 98.7 | 155 | 3 US-09-030-613-3 | Sequence 3, Appl1 |
| 17 | 817 | 98.7 | 155 | 4 US-09-098-628-2 | Sequence 2, Appl1 |
| 18 | 817 | 98.7 | 155 | 4 US-09-451-905-3 | Sequence 3, Appl1 |
| 19 | 817 | 98.7 | 155 | 4 US-09-368-951-28 | Sequence 28, Appl1 |
| 20 | 817 | 98.7 | 155 | 4 US-09-366-009-3 | Sequence 3, Appl1 |
| 21 | 817 | 98.7 | 155 | 4 US-09-619-213B-99 | Sequence 99, Appl1 |
| 22 | 817 | 98.7 | 155 | 4 PCT-US91-02186-2 | Patent No. 5514566 |
| 23 | 817 | 98.7 | 155 | 6 5514566-8 | Sequence 2, Appl1 |
| 24 | 817 | 98.7 | 158 | 2 US-08-599-895-3 | Sequence 3, Appl1 |
| 25 | 817 | 98.7 | 158 | 3 US-09-211-290-3 | Sequence 3, Appl1 |
| 26 | 817 | 98.7 | 158 | 3 US-09-322-676-3 | Sequence 3, Appl1 |
| 27 | 817 | 98.7 | 158 | 4 US-09-220-077C-2 | Sequence 2, Appl1 |

| | | | | | |
|----|-----|------|-----|---------------------|--------------------|
| 28 | 817 | 98.7 | 158 | 4 US-09-466-036A-3 | Sequence 3, Appl1 |
| 29 | 817 | 98.7 | 210 | 1 US-08-464-590A-14 | Sequence 14, Appl1 |
| 30 | 817 | 98.7 | 210 | 2 US-08-207-412B-9 | Sequence 9, Appl1 |
| 31 | 817 | 98.7 | 210 | 3 US-09-093-585-14 | Sequence 14, Appl1 |
| 32 | 817 | 98.7 | 432 | 1 US-07-959-369-8 | Sequence 8, Appl1 |
| 33 | 817 | 98.7 | 432 | 2 US-08-836-854-20 | Sequence 20, Appl1 |
| 34 | 817 | 98.7 | 432 | 4 US-09-366-009-4 | Sequence 4, Appl1 |
| 35 | 814 | 98.3 | 155 | 1 US-07-959-369-7 | Sequence 7, Appl1 |
| 36 | 814 | 98.3 | 432 | 1 US-07-959-369-9 | Sequence 9, Appl1 |
| 37 | 812 | 98.1 | 154 | 2 US-08-438-439C-24 | Sequence 24, Appl1 |
| 38 | 812 | 98.1 | 154 | 3 US-08-325-186-1 | Sequence 1, Appl1 |
| 39 | 812 | 98.1 | 235 | 1 US-08-078-683A-39 | Sequence 39, Appl1 |
| 40 | 811 | 97.9 | 457 | 4 US-09-366-009-5 | Sequence 5, Appl1 |
| 41 | 808 | 97.6 | 153 | 3 US-08-325-186-2 | Sequence 2, Appl1 |
| 42 | 808 | 97.6 | 154 | 5 PCT-US91-02186-6 | Sequence 6, Appl1 |
| 43 | 808 | 97.6 | 155 | 1 US-08-023-757-2 | Sequence 2, Appl1 |
| 44 | 808 | 97.6 | 155 | 1 US-08-177-502-2 | Sequence 2, Appl1 |
| 45 | 808 | 97.6 | 155 | 4 US-09-240-952-4 | Sequence 4, Appl1 |

ALIGNMENTS

RESULT 1
PCT-US91-02186-4
Sequence 4, Application PC/TUS9102186
GENERAL INFORMATION:
APPLICANT: California Biotechnology Inc.
INVENTOR: Thompson, Stewart A.
APPLICANT: Abraham, Judith A.
TITLE OF INVENTION: High Level Expression of Basic
TITLE OF INVENTION: Fibroblast Growth Factor Having a Homogeneous
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESSES:
ADDRESS: Irell & Manella
STREET: 545 Middlefield Road, Suite 200
CITY: Menlo Park
STATE: California
COUNTRY: USA
ZIP: 94025-3471
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US91/02186
FILING DATE: 19910702
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Murashige, Kate H.
REGISTRATION NUMBER: 29,959
REFERENCE/DOCKET NUMBER: 1900-0275, 41
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-327-7250
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US91-02186-4
Query Match 100.0%; Score 828; DB 5; Length 155;
Best Local Similarity 100.0%; Pred. No. 4.8e-88;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MAAGSITTLPALPEDGSGAAPPGRKLYCKXGAFLLRHPGQVGVREKSDPHI 60
Db 1 MAAGSITTLPALPEDGSGAAPPGRKLYCKXGAFLLRHPGQVGVREKSDPHI 60
QY 61 KLOLQAEERGVSVIKGVCANRYLAKMKEDGRLASKCVTDECFERLESNNYNTYSRKY 120

Db 61 KLOLQAEERGVSIKGYCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
Db 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155

RESULT 2

5514566-6
Patent No. 5514566
APPLICANT: FIDES, JOHN C.; ABRAHAM, JUDITH A.
TITLE OF INVENTION: METHODS OF PRODUCING RECOMBINANT
FIBROBLASTS GROWTH FACTORS
NUMBER OF SEQUENCES: 21
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/417,022
FILING DATE: 05-APR-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 809,163
FILING DATE: 16-DEC-1985
APPLICATION NUMBER: 775,521
FILING DATE: 12-SEP-1985
SEQ ID NO: 6:
LENGTH: 155
5514566-6

Query Match 100.0%; Score 828; DB 6; Length 155;
Best Local Similarity 100.0%; Pred. No. 4,8e-86;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
Db 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
QY 61 KLOLQAEERGVSIKGYCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
Db 61 KLOLQAEERGVSIKGYCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
Db 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155

RESULT 3

US-07-959-369-6
Sequence 6, Application US/07959369
Patent No. 5302701
GENERAL INFORMATION:
APPLICANT: Hidetaka HASHI et al.
TITLE OF INVENTION: No. 5302701el Functional Polypeptide
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Wenderoth, Lind & Ponack
STREET: 805 Fifteenth Street, N.W., #700
City: Washington
STATE: D.C.
COUNTRY: U.S.A.
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 5.25 inch, 500 KB
COMPUTER: IBM Compatible
OPERATING SYSTEM: MS-DOS
SOFTWARE: Wordperfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/959,369
FILING DATE: 19921013
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Warren M. Cheek, Jr.

REGISTRATION NUMBER: 33,367
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-8850
TELEFAX:
TELEX:

INFORMATION FOR SEQ ID NO: 6:

SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: polypeptide
HYPOTHETICAL:
ANTI-SENSE:
FRAGMENT TYPE:
ORIGINAL SOURCE:
ORGANISM:

STRAIN:
INDIVIDUAL ISOLATE:
DEVELOPMENTAL STAGE:
HAPLOTYPE:

TISSUE TYPE:
CELL TYPE:
CELL LINE:

ORGANELLE:
IMMEDIATE SOURCE:
LIBRARY:

CLONE:
POSITION IN GENOME:
CHROMOSOME/SEGMENT:
MAP POSITION:

UNITS:
FEATURE:

NAME/KEY:
LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION:
PUBLICATION INFORMATION:
AUTHORS:

TITLE:
JOURNAL:

VOLUME:
ISSUE:

PAGES:
DATE:

DOCUMENT NUMBER:
FILING DATE:

PUBLICATION DATE:
RELEVANT RESIDUES IN SEQ ID NO:

US-07-959-369-6

Query Match 98.7%; Score 817; DB 1; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
Db 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
QY 61 KLOLQAEERGVSIKGYCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
Db 61 KLOLQAEERGVSIKGYCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
Db 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155

RESULT 4

US-07-842-177A-1
Sequence 1, Application US/07842177A
Patent No. 5348863

GENERAL INFORMATION:
APPLICANT: MONSIEUR, PIERRE
APPLICANT: PAUL, FRANCOIS
APPLICANT: BETBEDER, DIDIER
APPLICANT: SAMIENTOS, PAOLO
TITLE OF INVENTION: PROCESS FOR THE ENZYMATIC PREPARATION OF
TITLE OF INVENTION: BASIC FIBROBLAST GROWTH FACTOR
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT,
ADDRESS: P.C.
STREET: 1755 Jefferson Davis Highway, Suite 400
CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent in Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/842,177A
FILING DATE: 19920402
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9017008.5
FILING DATE: 02-AUG-1990
ATTORNEY/AGENT INFORMATION:
NAME: OBLON, NO. 534863man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 769-263-0 PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 521-4500
TELEFAX: (703) 486-2347
TELEX: 248855 OBPAT UR
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
US-07-842-177A-1
Query Match 98.7%; Score 817; DB 1; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87; 1; Indels 0; Gaps 0;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Db 1 MAAGSITLPLALPEDGSGAFPPGHFKDPKRLKCNKGFFLRHPDGRVGVREKSDPHI 60
Qy 1 KLOLOAERGVVSIKGVCAIRYLAMKEDGRLASKCVTDCEFFERLESNNVTYRSRKY 120
Db 61 KLOLOAERGVVSIKGVCAIRYLAMKEDGRLASKCVTDCEFFERLESNNVTYRSRKY 120
Qy 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
Db 121 TSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
RESULT 5
US-08-439-725A-10
Sequence 10, Application US/08439725A
GENERAL INFORMATION:
APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
TITLE OF INVENTION: FACTOR-1 (FHF-1) AND METHODS OF USE
NUMBER OF SEQUENCES: 15

CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent in Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/439,725A
FILING DATE: 12-MAY-1995
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/047001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 617/678-5099
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-439-725A-10
Query Match 98.7%; Score 817; DB 1; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87; 1; Indels 0; Gaps 0;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Db 1 MAAGSITLPLALPEDGSGAFPPGHFKDPKRLKCNKGFFLRHPDGRVGVREKSDPHI 60
Qy 1 KLOLOAERGVVSIKGVCAIRYLAMKEDGRLASKCVTDCEFFERLESNNVTYRSRKY 120
Db 61 KLOLOAERGVVSIKGVCAIRYLAMKEDGRLASKCVTDCEFFERLESNNVTYRSRKY 120
Qy 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
Db 121 TSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
RESULT 6
US-08-325-632-1
Sequence 1, Application US/08325632
Patent No. 5714458
GENERAL INFORMATION:
APPLICANT: ADAMI, MARCO
APPLICANT: DALIA CASA, ROSANNA
APPLICANT: GAMBINI, LUCIANO
APPLICANT: MAGRINI, ROBERTO
APPLICANT: MARIANI, ROSARIA
APPLICANT: PERRONE, GIOVANNI
TITLE OF INVENTION: STABLE PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: CONTAINING A FIBROBLAST GROWTH FACTOR
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT,
ADDRESS: P.C.
STREET: 1755 Jefferson Davis Highway, Fourth Floor
CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/325,632
FILING DATE:
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/966,077
FILING DATE:
APPLICATION NUMBER: GB 9015824.7
FILING DATE: 18-JUL-1990
ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5714458man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 769-288-0 PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)412-3000
TELEFAX: (703)413-2220
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-325-632-1

Query Match 98.7%; Score 817; DB 1; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVGVREKSDPHI 60
QY 61 KIQLOAEEGVVSIKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSRY 120
DB 61 KIQLOAEEGVVSIKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSRY 120
QY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 7
US-08-462-169B-10
Sequence 10, Application US/08462169B
Patent No. 5773252
GENERAL INFORMATION:
APPLICANT: John Greene and Craig A. Rosen
TITLE OF INVENTION: Fibroblast Growth Factor-15
NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN,
STREET: 6 BECKER FARM ROAD
CITY: ROSELAND
STATE: NEW JERSEY
COUNTRY: USA
ZIP: 07068
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 INCH DISKETTE
COMPUTER: IBM PS/2
OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/462,169B
FILING DATE: 05 JUN 95
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: MULLINS, J.G.

REGISTRATION NUMBER: 33,073
REFERENCE/DOCKET NUMBER: 325800-441 (PF203)
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-994-1700
TELEFAX: 201-994-1744
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 AMINO ACIDS
TYPE: AMINO ACID
STRANDEDNESS:
TOPOLOGY: LINEAR
MOLECULE TYPE: PROTEIN
US-08-462-169B-10

Query Match 98.7%; Score 817; DB 1; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVGVREKSDPHI 60
QY 61 KIQLOAEEGVVSIKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSRY 120
DB 61 KIQLOAEEGVVSIKVCANRYLAMKEDGRLLASCVTDECFEERLESNNNTYRSRY 120
QY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 8
US-08-867-471-10
Sequence 10, Application US/08867471
Patent No. 5872226
GENERAL INFORMATION:
APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
APPLICANT: MacKe, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/867,471
FILING DATE: 02-JUN-1997
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/439,725
FILING DATE: 12-MAY-1995
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/047001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 617/678-5099
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant

TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-867-471-10

Query Match 98.7%; Score 817; DB 2; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVNDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVNDGVRKSDPHI 60
QY 61 KLOQAEERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 9

US-08-438-439C-14
Sequence 14, Application US/08438439C
Patent No. 5876967
GENERAL INFORMATION:
APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Phillip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
OPERATING SYSTEM: IBM PC compatible
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/438,439C
FILING DATE: May 12, 1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Hallie, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/046001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-5099
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-438-439C-14

Query Match 98.7%; Score 817; DB 2; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVNDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVNDGVRKSDPHI 60
QY 61 KLOQAEERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120

DB 61 KLOQAEERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120

QY 121 SSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 10

US-08-951-822-28
Sequence 28, Application US/08951822A
Patent No. 5989866
GENERAL INFORMATION:
APPLICANT: Delsher, Theresa A.
APPLICANT: Conklin, Darrell C.
APPLICANT: Raymond, Fenella
APPLICANT: Bukowski, Thomas R.
APPLICANT: Holderman, Susan D.
APPLICANT: Hansen, Birgit
APPLICANT: Sheppard, Paul O.
TITLE OF INVENTION: NOVEL RGF HOMOLOGS
FILE REFERENCE: 96-20
CURRENT APPLICATION NUMBER: US/08/951,822A
CURRENT FILING DATE: 1997-10-16
NUMBER OF SEQ ID NOS: 36
SOFTWARE: FastSeq for Windows Version 3.10
SEQ ID NO 28
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-08-951-822-28

Query Match 98.7%; Score 817; DB 2; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVNDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVNDGVRKSDPHI 60
QY 61 KLOQAEERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFFERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 11
US-09-103-079-10
Sequence 10, Application US/09103079A
Patent No. 6013477
GENERAL INFORMATION:
APPLICANT: Greene, John M.
APPLICANT: Rosen, Craig A.
TITLE OF INVENTION: Fibroblast Growth Factor 15
FILE REFERENCE: PF203D1
CURRENT APPLICATION NUMBER: US/09/103,079A
CURRENT FILING DATE: 1998-06-23
EARLIER APPLICATION NUMBER: 08/462,169
EARLIER FILING DATE: 1995-06-05
NUMBER OF SEQ ID NOS: 32
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 10
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-103-079-10

Query Match 98.7%; Score 817; DB 3; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITLTPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITLTPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
QY 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNNTYRSRY 120
DB 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNNTYRSRY 120
QY 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 12
US-08-705-245-6
Sequence 6, Application US/08705245
Patent No. 6020189
GENERAL INFORMATION:
APPLICANT: Nathans et al., Jeremy
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
FACTORS (FHBs) AND METHODS OF USE
NUMBER OF SEQUENCES: 37
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
OPERATING SYSTEM: IBM PC compatible
SOFTWARE: Patent in Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/705.245
FILING DATE: 30-AUG-1996
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Wetherell, Jr., John R.
REGISTRATION NUMBER: 31,678
REFERENCE/DOCKET NUMBER: 07265/094001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-50999
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-705-245-6

Query Match 98.7%; Score 817; DB 3; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87; 1; Indels 0; Gaps 0;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITLTPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITLTPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
QY 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNNTYRSRY 120
DB 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNNTYRSRY 120
QY 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 13

US-08-897-924A-25
Sequence 25, Application US/08897924A
Patent No. 6028058
GENERAL INFORMATION:
APPLICANT: Flockiewicz, Robert Z.
TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR REGULATING
NUCLEAR TRAFFICKING OF PROTEINS
NUMBER OF SEQUENCES: 28
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
CITY: Seattle
STATE: Washington
COUNTRY: USA
ZIP: 98104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
OPERATING SYSTEM: IBM PC compatible
SOFTWARE: Patent in Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/897.924A
FILING DATE: 21-JUL-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Makl, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 200124.403
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-897-924A-25

Query Match 98.7%; Score 817; DB 3; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87; 1; Indels 0; Gaps 0;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITLTPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITLTPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
QY 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNNTYRSRY 120
DB 61 KLQLOAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEFLERLESNNNTYRSRY 120
QY 121 SSWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 14
US-08-718-904-11
Sequence 11, Application US/08718904
Patent No. 6037329
GENERAL INFORMATION:
APPLICANT: Baird, J. Andrew
APPLICANT: Chandler, Lois Ann
APPLICANT: Sosnowski, Barbara A.
TITLE OF INVENTION: COMPOSITIONS CONTAINING NUCLEIC ACIDS AND LIGANDS FOR THERAPE
NUMBER OF SEQUENCES: 128
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
CITY: Seattle
STATE: Washington
COUNTRY: USA
ZIP: 98104-7092

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/718,904
FILING DATE: 24-SEP-1996
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: No. 6037329,enburg Ph.D., Carol
REGISTRATION NUMBER: 39,317
REFERENCE/DOCKET NUMBER: 760100.415c1
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 682-6031
TELEFAX: (206) 682-4900
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: unknown
MOLECULE TYPE: peptide
FEATURE:
OTHER INFORMATION: /note= "PGF-2"
US-08-718-904-11

Query Match 98.7%; Score 817; DB 3; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87; 1; Indels 0; Gaps 0;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPBDGGGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPBDGGGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60

QY 61 KLQLOAERGVVSIKGVANRYLAMKEDGRLLASKCVTDECFEFLRLSSNNYNTYRSKY 120
DB 61 KLQLOAERGVVSIKGVANRYLAMKEDGRLLASKCVTDECFEFLRLSSNNYNTYRSKY 120

QY 121 SSWYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155

RESULT 15
US-09-023-082A-17
Sequence 17, Application US/09023082A
Patent No. 6077692
GENERAL INFORMATION:
APPLICANT: RUBEN, STEVEN M.
APPLICANT: JIMENEZ, PABLO
APPLICANT: DUAN, D. ROXANNE
APPLICANT: RAMPY, MARK A.
APPLICANT: MENDRICK, DONNA
APPLICANT: ZHANG, JUN
APPLICANT: NI, JIAN
APPLICANT: MOORE, PAUL A.
APPLICANT: COLEMAN, TIMOTHY A.
APPLICANT: GRUBER, JOACHIM R.
APPLICANT: DILLON, PATRICK J.
APPLICANT: GENTZ, REINER L.
TITLE OF INVENTION: KERATINOCYTE GROWTH FACTOR-2
NUMBER OF SEQUENCES: 148
CORRESPONDENCE ADDRESS:
ADDRESSEE: STERN, KESSLER, GOLDSTEIN & FOX, P.L.L.C.
STREET: 1100 NEW YORK AVE, NW, SUITE 600
CITY: WASHINGTON
STATE: DC
COUNTRY: USA
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/023,082A
FILING DATE: 13-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/01790
FILING DATE: 14-FEB-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/461,195
FILING DATE: 05-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/023,852
FILING DATE: 13-AUG-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/039,045
FILING DATE: 28-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/862,432
FILING DATE: 23-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/910,875
FILING DATE: 13-AUG-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/055,561
FILING DATE: 13-AUG-1997
ATTORNEY/AGENT INFORMATION:
NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,688
REFERENCE/DOCKET NUMBER: 1488.0360008/EKS
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
MOLECULE TYPE: protein
US-09-023-082A-17

Query Match 98.7%; Score 817; DB 3; Length 155;
Best Local Similarity 98.7%; Pred. No. 9e-87; 1; Indels 0; Gaps 0;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPBDGGGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPBDGGGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60

QY 61 KLQLOAERGVVSIKGVANRYLAMKEDGRLLASKCVTDECFEFLRLSSNNYNTYRSKY 120
DB 61 KLQLOAERGVVSIKGVANRYLAMKEDGRLLASKCVTDECFEFLRLSSNNYNTYRSKY 120

QY 121 SSWYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155

Search completed: December 16, 2002, 17:58:24
Job time: 12.5 secs


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Sequence 6, Application US/09886856
Patent No. US20020115603A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha Jo
TITLE OF INVENTION: Methods and Compositions for the
TREATMENT OF PERIPHERAL ARTERY DISEASE
FILE REFERENCE: P16090.004
CURRENT APPLICATION NUMBER: US/09/886,856
CURRENT FILING DATE: 2001-06-21
PRIOR APPLICATION NUMBER: 60/213,504
PRIOR FILING DATE: 2000-06-22
PRIOR APPLICATION NUMBER: 60/264,572
PRIOR FILING DATE: 2000-01-26
PRIOR APPLICATION NUMBER: 60/276,549
PRIOR FILING DATE: 2001-03-16
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 6
LENGTH: 155
TYPE: PRT
ORGANISM: Bos taurus
US-09-886-856-6

Query Match          100.0%; Score 828; DB 10; Length 155;
Best Local Similarity 100.0%; Pred. No. 1,9e-78;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDGVRKSDPHI 60
QY 61 KLOQAEEERGVSIIKGCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLOQAEEERGVSIIKGCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155
DB 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155

RESULT 3
US-09-822-485-5
Sequence 5, Application US/09822485
Patent No. US20020001825A1
GENERAL INFORMATION:
APPLICANT: Itoh, No. US20020001825A1yuki
TITLE OF INVENTION: NO. US20020001825A1el Fibroblast Growth Factor-Like Polypeptides
FILE REFERENCE: 08035.0001-01000
CURRENT APPLICATION NUMBER: US/09/822,485
CURRENT FILING DATE: 2001-04-02
NUMBER OF SEQ ID NOS: 35
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 5
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
PUBLICATION INFORMATION:
JOURNAL: EMBO J.
VOLUME: 5
PAGES: 2523-2528
DATE: 1986
US-09-822-485-5

Query Match          98.7%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 2,5e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDGVRKSDPHI 60
QY 61 KLOQAEEERGVSIIKGCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLOQAEEERGVSIIKGCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155
DB 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155
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DB 61 KLOQAEEERGVSIIKGCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155
DB 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155

RESULT 4
US-09-802-365-8
Sequence 8, Application US/09802365
Patent No. US20020032153A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha Jo
TITLE OF INVENTION: Methods and Compositions for the
TREATMENT OF ERECTILE DYSFUNCTION
FILE REFERENCE: 1671.003
CURRENT APPLICATION NUMBER: US/09/802,365
CURRENT FILING DATE: 2001-03-09
PRIOR APPLICATION NUMBER: 60/188,480
PRIOR FILING DATE: 2000-03-10
PRIOR APPLICATION NUMBER: 60/203,415
PRIOR FILING DATE: 2000-05-11
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 8
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-802-365-8

Query Match          98.7%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 2,5e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDGVRKSDPHI 60
QY 61 KLOQAEEERGVSIIKGCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLOQAEEERGVSIIKGCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155
DB 121 SSMYVALKRTGOYKLGKPTGPGOKAILFLPMSAKS 155

RESULT 5
US-09-251-263-10
Sequence 10, Application US/09251263
Patent No. US20020052477A1
GENERAL INFORMATION:
APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
FACTOR-1 (FHF-1) AND METHODS OF USE
FILE REFERENCE: 07265/047003
CURRENT APPLICATION NUMBER: US/09/251,263
CURRENT FILING DATE: 1999-02-16
EARLIER APPLICATION NUMBER: 08/867,471
EARLIER FILING DATE: 1997-06-02
EARLIER APPLICATION NUMBER: 08/439,725
EARLIER FILING DATE: 1995-05-12
NUMBER OF SEQ ID NOS: 15
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 10
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-251-263-10

Query Match          98.7%; Score 817; DB 10; Length 155;
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Best Local Similarity 98.7%; Pred. No. 2.5e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
QY 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 6

US-09-425-021-10
Sequence 10, Application US/09425021
Patent No. US20020076748A1
GENERAL INFORMATION:
APPLICANT: Greene, John M.
APPLICANT: Rosen, Craig A.
TITLE OF INVENTION: Fibroblast Growth Factor 15
FILE REFERENCE: PR203D1
CURRENT APPLICATION NUMBER: US/09/425,021
CURRENT FILING DATE: 1999-10-25
EARLIER APPLICATION NUMBER: 09/103,079
EARLIER FILING DATE: 1998-06-23
NUMBER OF SEQ ID NOS: 32
SOFTWARE: Patent Ver. 2.0
SEQ ID NO 10
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-425-021-10

Query Match 98.7%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 2.5e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
QY 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 7
US-09-886-856-8

Sequence 8, Application US/09886856
Patent No. US20020115603A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha Jo
TITLE OF INVENTION: Methods and Compositions for the
FILE REFERENCE: PPI6090.004
CURRENT APPLICATION NUMBER: US/09/886,856
CURRENT FILING DATE: 2001-06-21
PRIOR APPLICATION NUMBER: 60/213,504
PRIOR FILING DATE: 2000-06-22
PRIOR APPLICATION NUMBER: 60/264,572
PRIOR FILING DATE: 2000-01-26
PRIOR APPLICATION NUMBER: 60/276,549
PRIOR FILING DATE: 2001-03-16
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSeq for Windows Version 4.0

SEQ ID NO 8
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-886-856-8

Query Match 98.7%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 2.5e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
QY 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 8

US-09-749-728B-7
Sequence 7, Application US/09749728B
Patent No. US20020142457A1
GENERAL INFORMATION:
APPLICANT: Umezawa, Akihito
APPLICANT: Hata, Jun-ichi
APPLICANT: Fukuda, Keiichi
APPLICANT: Ogawa, Satoshi
APPLICANT: Sakurada, Kazuhiro
APPLICANT: Gojo, Satoshi
TITLE OF INVENTION: THE CELL HAVING THE POTENTIALITY OF DIFFERENTIATION INTO CARDIOMY
FILE REFERENCE: 00766.000043
CURRENT APPLICATION NUMBER: US/09/749,728B
CURRENT FILING DATE: 2001-09-17
PRIOR APPLICATION NUMBER: H11-372826
PRIOR FILING DATE: 1999-12-28
PRIOR APPLICATION NUMBER: PCT-JP00-01148
PRIOR FILING DATE: 2000-02-28
PRIOR APPLICATION NUMBER: PCT-JP00-07741
PRIOR FILING DATE: 2000-11-02
NUMBER OF SEQ ID NOS: 80
SOFTWARE: Patent Ver. 2.0
SEQ ID NO 7
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-749-728B-7

Query Match 98.7%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 2.5e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCKNGGFRLRHPDGRVDGVREKSDPHI 60
QY 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVSIKVCANRYLANKEDGRLLASKCVTDECFFERLESNNYNTYRSRKY 120
QY 121 SSWYVALKRTGOYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 9

US-09-826-210-2
Sequence 2, Application US/09826210

Patent No. US2001002004A1
GENERAL INFORMATION:
APPLICANT: Springer, Barry A.
APPLICANT: Pantoliano, Michael W.
APPLICANT: Sharp, Celja M.
TITLE OF INVENTION: Analogs of Human basic Fibroblast Growth Factor
FILE REFERENCE: 1503.022003
CURRENT APPLICATION NUMBER: US/09/826,210
PRIOR FILING DATE: 2001-04-05
PRIOR APPLICATION NUMBER: US 09/220,077
PRIOR FILING DATE: 1998-12-23
PRIOR APPLICATION NUMBER: US 60/068,667
NUMBER OF SEQ ID NOS: 4
SOFTWARE: Patentin version 3.0
SEQ ID NO 2
LENGTH: 158
TYPE: PRT
ORGANISM: Homo sapiens
US-09-826-210-2

Query Match 98.7%; Score 817; DB 10; Length 158;
Best Local Similarity 98.7%; Pred. No. 2.6e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAPPGHFKDPKRLYCKNGFFLRHPDGRVDGVRKSDPHI 60
DB 4 MAAGSITTLPALPEDGSGAPPGHFKDPKRLYCKNGFFLRHPDGRVDGVRKSDPHI 63
QY 61 KLQLAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
DB 64 KLQLAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 123
QY 121 SSWYVALKRTGQYKLGPKTGPOKAILFLPMSAKS 155
DB 124 TSWYVALKRTGQYKLGSKTGPOKAILFLPMSAKS 158

RESULT 10
US-09-902-773A-4
Sequence 4, Application US/09902773A
Patent No. US20020034787A1
GENERAL INFORMATION:
APPLICANT: HU, JING-SHAN
GOCAYNE, JEANNINE D.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR-10
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: STERN, KESSLER, GOLDSTEIN & FOX
STREET: 1100 NEW YORK AVENUE, SUITE 600
CITY: WASHINGTON
STATE: DC
COUNTRY: US
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/902,773A
FILING DATE: 12-Jul-2001
CLASSIFICATION: <unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/803,926
FILING DATE: 21-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,688
REFERENCE/DOCKET NUMBER: 1488.0350001
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371-2600
TELEFAX: (202) 371-2540

INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 210 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-902-773A-4

Query Match 98.7%; Score 817; DB 10; Length 210;
Best Local Similarity 98.7%; Pred. No. 3.6e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAPPGHFKDPKRLYCKNGFFLRHPDGRVDGVRKSDPHI 60
DB 56 MAAGSITTLPALPEDGSGAPPGHFKDPKRLYCKNGFFLRHPDGRVDGVRKSDPHI 115
QY 61 KLQLAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
DB 116 KLQLAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 175
QY 121 SSWYVALKRTGQYKLGPKTGPOKAILFLPMSAKS 155
DB 176 TSWYVALKRTGQYKLGSKTGPOKAILFLPMSAKS 210

RESULT 11
US-09-934-706-2
Sequence 2, Application US/09934706
Patent No. US20020102709A1
GENERAL INFORMATION:
APPLICANT: Terumo Corporation
TITLE OF INVENTION: Functional Hybrid Polypeptide with Collagen-binding
FILE REFERENCE: 19990120
CURRENT APPLICATION NUMBER: US/09/934,706
CURRENT FILING DATE: 2001-08-23
NUMBER OF SEQ ID NOS: 16
SOFTWARE:
SEQ ID NO 2
LENGTH: 159
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURES:
OTHER INFORMATION: Description of Artificial Sequence: Human Basic
OTHER INFORMATION: Fibroblast Growth Factor with Enterokinase
NAME/KEY: PEPTIDE
LOCATION: (1)..(5)
OTHER INFORMATION: /note="enterokinase recognition sequence"
NAME/KEY: PEPTIDE
LOCATION: (6)..(159)
OTHER INFORMATION: /note="human fibroblast growth factor"
US-09-934-706-2

Query Match 98.1%; Score 812; DB 10; Length 159;
Best Local Similarity 98.7%; Pred. No. 8.5e-77;
Matches 152; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 AAGSITTLPALPEDGSGAPPGHFKDPKRLYCKNGFFLRHPDGRVDGVRKSDPHI 61
DB 6 AAGSITTLPALPEDGSGAPPGHFKDPKRLYCKNGFFLRHPDGRVDGVRKSDPHI 65
QY 62 LQLAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 121
DB 66 LQLAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 125
QY 122 SSWYVALKRTGQYKLGPKTGPOKAILFLPMSAKS 155
DB 126 SSWYVALKRTGQYKLGSKTGPOKAILFLPMSAKS 159


```
RESULT 12
US-09-934-706-4
; Sequence 4, Application US/09934706
; Patent No. US20020102709A1
; GENERAL INFORMATION:
; APPLICANT: Terumo Corporation
; TITLE OF INVENTION: Functional Hybrid Polypeptide with Collagen-binding
; TITLE OF INVENTION: Activity
; FILE REFERENCE: 19990120
; CURRENT APPLICATION NUMBER: US/09/934,706
; CURRENT FILING DATE: 2001-08-23
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE:
; SEQ ID NO 4
; LENGTH: 501
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Hybrid
; OTHER INFORMATION: Polypeptide of Human Fibronectin Collagen-Binding
; OTHER INFORMATION: Domain and Human Basic Fibroblast Growth Factor
; NAME/KEY: INIT_MER
; LOCATION: (1)
; NAME/KEY: DOMAIN
; LOCATION: (2)..(341)
; OTHER INFORMATION: /note="human fibronectin collagen-binding domain"
; NAME/KEY: PEPTIDE
; LOCATION: (343)..(347)
; OTHER INFORMATION: /note="enterokinase recognition sequence"
; NAME/KEY: PEPTIDE
; LOCATION: (348)..(501)
; OTHER INFORMATION: /note="human fibroblast growth factor"
US-09-934-706-4

Query Match      98.1%; Score 812; DB 10; Length 501;
Best Local Similarity 98.7%; Pred. No.3.3e-76;
Matches 152; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 AAGSITLPLPEDGGGAPPPGHPKDPKRLYCNGGFFLRHHPDGRVDGVRKSDPHIK 61
DB 348 AAGSITLPLPEDGGGAPPPGHPKDPKRLYCNGGFFLRHHPDGRVDGVRKSDPHIK 407
QY 62 LQLOAERGVSVIKGVCANRYLANKEDRLASKCVTDECFPFRLSSNNYTRSKRY 121
DB 408 LQLOAERGVSVIKGVCANRYLANKEDRLASKCVTDECFPFRLSSNNYTRSKRYT 467
QY 122 SWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155
DB 468 SWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 501

RESULT 13
US-10-016-447-8
; Sequence 8, Application US/10016447
; Patent No. US20020090651A1
; GENERAL INFORMATION:
; APPLICANT: Kirschner, Marc W.
; TITLE OF INVENTION: Receptor-Ligand Assay
; FILE REFERENCE: H095-01A2
; CURRENT APPLICATION NUMBER: US/10/016,447
; CURRENT FILING DATE: 2001-12-10
; PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US/08/776,207
; PRIOR FILING DATE: EARLIER FILING DATE: 1997-06-23
; PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1995-05-15
; PRIOR FILING DATE: EARLIER FILING DATE: 1994-07-22
; NUMBER OF SEQ ID NOS: 18
; SOFTWARE: PASCSEQ for Windows Version 3.0
; SEQ ID NO 8
; LENGTH: 150
; TYPE: PRT
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; ORGANISM: Homo sapien
US-10-016-447-8

Query Match      96.0%; Score 795; DB 12; Length 150;
Best Local Similarity 98.7%; Pred. No.4.5e-75;
Matches 148; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITLPLPEDGGGAPPPGHPKDPKRLYCNGGFFLRHHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITLPLPEDGGGAPPPGHPKDPKRLYCNGGFFLRHHPDGRVDGVRKSDPHI 60
QY 61 KLOLOAERGVSVIKGVCANRYLANKEDRLASKCVTDECFPFRLSSNNYTRSKRY 120
DB 61 KLOLOAERGVSVIKGVCANRYLANKEDRLASKCVTDECFPFRLSSNNYTRSKRY 120
QY 121 SSWYVALKRTGQYKLGPKTGPQKAILFLP 150
DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLP 150

RESULT 14
US-10-131-965-5
; Sequence 5, Application US/10131965
; Patent No. US20020165160A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha J.
; APPLICANT: Kavanaugh, Michael W.
; TITLE OF INVENTION: Angiogenically Effective Unit Dose of FGF and Method of
; FILE REFERENCE: 1296/12169US05
; CURRENT APPLICATION NUMBER: US/10/131,965
; CURRENT FILING DATE: 2002-04-25
; PRIOR APPLICATION NUMBER: US/09/417,721
; PRIOR FILING DATE: 1999-10-13
; PRIOR APPLICATION NUMBER: 60/104,103
; PRIOR FILING DATE: 1998-10-13
; NUMBER OF SEQ ID NOS: 15
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 5
; LENGTH: 146
; TYPE: PRT
; ORGANISM: bovine FGF-2
US-10-131-965-5

Query Match      95.0%; Score 787; DB 9; Length 146;
Best Local Similarity 100.0%; Pred. No.2.9e-74;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 10 PALPEDGGGAPPPGHPKDPKRLYCNGGFFLRHHPDGRVDGVRKSDPHIKLOLOAER 69
DB 1 PALPEDGGGAPPPGHPKDPKRLYCNGGFFLRHHPDGRVDGVRKSDPHIKLOLOAER 60
QY 70 GWSIKGVCANRYLANKEDRLASKCVTDECFPFRLSSNNYTRSKRYSSWYVALKR 129
DB 61 GWSIKGVCANRYLANKEDRLASKCVTDECFPFRLSSNNYTRSKRYSSWYVALKR 120
QY 130 TGOYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TGOYKLGPKTGPQKAILFLPMSAKS 146

RESULT 15
US-09-802-365-2
; Sequence 2, Application US/09802365
; Patent No. US20020032153A1
; GENERAL INFORMATION:
; APPLICANT: Whitehouse, Martha Jo
; TITLE OF INVENTION: Methods and Compositions for the
; FILE REFERENCE: 1671.003
; CURRENT APPLICATION NUMBER: US/09/802,365
; CURRENT FILING DATE: 2001-03-09
; PRIOR APPLICATION NUMBER: 60/188,480
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;; PRIOR FILING DATE: 2000-03-10
;; PRIOR APPLICATION NUMBER: 60/203,415
;; PRIOR FILING DATE: 2000-05-11
;; NUMBER OF SEQ ID NOS: 9
;; SOFTWARE: FASTSEQ for Windows Version 4.0
;; SEQ ID NO 2
;; LENGTH: 146
;; TYPE: PRT
;; ORGANISM: Bos taurus
US-09-802-365-2

Query Match 95.0%; Score 787; DB 10; Length 146;
Best Local Similarity 100.0%; Pred. No. 2.9e-74;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 10 PALPEDGSSGAFPPGHFKDPRKLYCKNGGFLRIHPDGRVDGVAREKSDPHIKLQLQAEER 69
DB 1 PALPEDGSSGAFPPGHFKDPRKLYCKNGGFLRIHPDGRVDGVAREKSDPHIKLQLQAEER 60
QY 70 GVVISIKGVCANRYLAMKEDGRLLASKCVTDCEFFERLESNNNTYRSRKYSSWYVALKR 129
DB 61 GVVISIKGVCANRYLAMKEDGRLLASKCVTDCEFFERLESNNNTYRSRKYSSWYVALKR 120
QY 130 TGQYKLGPKTGPQKAILFLPMSAKS 155
DB 121 TGQYKLGPKTGPQKAILFLPMSAKS 146

Search completed: December 16, 2002, 17:56:31
Job time : 8.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:53:20, Search time 14.5 Seconds
(without alignment)
1027.644 Million cell updates/sec

Title: 'us-09-886-856-6

Perfect score: 828
Sequence: 1 MAAGSTTLPALPEDGSGA.....GPKTGPQKAILFLPMASKS 155

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database:

1: p1r1:*
2: p1r2:*
3: p1r3:*
4: p1r4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----------|--------------------|
| 1 | 828 | 100.0 | 157 | 1 GKB08 | basic fibroblast g |
| 2 | 817 | 98.7 | 210 | 2 A32398 | basic fibroblast g |
| 3 | 796.5 | 96.2 | 154 | 2 A31574 | basic fibroblast g |
| 4 | 781.5 | 94.4 | 154 | 2 C37360 | basic fibroblast g |
| 5 | 781 | 94.3 | 146 | 1 S00185 | basic fibroblast g |
| 6 | 770 | 93.0 | 189 | 2 A48834 | basic fibroblast g |
| 7 | 758.5 | 91.6 | 144 | 2 S31622 | basic fibroblast g |
| 8 | 736 | 88.9 | 137 | 2 I46711 | fibroblast growth |
| 9 | 685 | 82.7 | 155 | 1 A40117 | basic fibroblast g |
| 10 | 466.5 | 56.3 | 155 | 2 A32484 | basic fibroblast g |
| 11 | 427.5 | 51.6 | 155 | 1 A60721 | acidic fibroblast |
| 12 | 419.5 | 50.7 | 155 | 2 A60130 | acidic fibroblast |
| 13 | 418.5 | 50.5 | 155 | 1 A33655 | acidic fibroblast |
| 14 | 413.5 | 49.9 | 155 | 2 S04147 | acidic fibroblast |
| 15 | 413.5 | 49.9 | 155 | 2 D37360 | acidic fibroblast |
| 16 | 412.5 | 49.8 | 152 | 2 JH0476 | acidic fibroblast |
| 17 | 404.5 | 48.9 | 155 | 2 JH0055 | acidic fibroblast |
| 18 | 402.5 | 48.6 | 155 | 1 GKB0A | acidic fibroblast |
| 19 | 262 | 31.6 | 194 | 2 I50710 | fibroblast growth |
| 20 | 252.5 | 30.5 | 206 | 1 TVHHS | fibroblast growth |
| 21 | 252 | 30.4 | 256 | 2 JG4627 | fibroblast growth |
| 22 | 250.5 | 30.3 | 264 | 2 A36207 | fibroblast growth |
| 23 | 250.5 | 30.3 | 266 | 2 S68144 | fibroblast growth |
| 24 | 249 | 29.6 | 220 | 2 I50588 | fibroblast growth |
| 25 | 245 | 29.6 | 208 | 2 S20102 | fibroblast growth |
| 26 | 244.5 | 29.5 | 206 | 2 S14192 | fibroblast growth |
| 27 | 241 | 29.1 | 267 | 1 TVHDS | fibroblast growth |
| 28 | 238.5 | 28.8 | 202 | 1 TVHMS | fibroblast growth |

| | | | | | |
|----|-------|------|-----|----------|----------------------|
| 30 | 236 | 28.5 | 187 | 2 S23595 | embryonic fibroblast |
| 31 | 235.5 | 28.4 | 237 | 1 S39582 | transforming prote |
| 32 | 235 | 28.4 | 245 | 1 TVHST2 | transforming prote |
| 33 | 234 | 28.3 | 192 | 1 S04742 | fibroblast growth |
| 34 | 231.5 | 28.0 | 239 | 1 S04742 | embryonic fibroblast |
| 35 | 216 | 26.1 | 208 | 2 S66466 | fibroblast growth |
| 36 | 216 | 26.1 | 208 | 2 A48137 | fibroblast growth |
| 37 | 209 | 25.2 | 211 | 2 JG7353 | fibroblast growth |
| 38 | 207 | 25.0 | 208 | 2 JG7082 | fibroblast somatoc |
| 39 | 206.5 | 24.9 | 207 | 2 JG5940 | fibroblast growth |
| 40 | 205.5 | 24.8 | 207 | 2 JG5941 | fibroblast growth |
| 41 | 204.5 | 24.7 | 194 | 2 I48610 | keratinocyte growth |
| 42 | 203 | 24.5 | 212 | 2 JG7511 | fibroblast growth |
| 43 | 202.5 | 24.5 | 194 | 1 JG6301 | fibroblast growth |
| 44 | 202.5 | 24.5 | 194 | 1 S26049 | fibroblast growth |
| 45 | 202.5 | 24.5 | 194 | 2 S49501 | keratinocyte growth |

ALIGNMENTS

RESULT 1

GKB08

basic fibroblast growth factor precursor - bovine (fragment)

N/Alternate names: bFGF, kidney-derived growth factor, prostatripin

C/Species: Bos primigenius taurus (cattle)

C/Date: 13-Aug-1986 #sequence revision 02-Jun-1995 #text_change 24-Nov-1999

C/Accession: A24663; A32878; A33784; A61551; A60310; A61094; A01386; A60316; A220

R/Author: J.A.; Merz, A.; Whang, J.L.; Tumolo, A.; Friedmann, J.; Hjerrild, K.A.; Gospic

Science 233, 545-548, 1986

A/Title: Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic fib

A/Reference number: A94290; MUID:86261806; PMID:2425435

A/Accession: A24663

A/Molecule type: mRNA

A/Residues: 3-157 <ABR>

A/Cross-references: GB:M13440; NID:G163049; PIDN:AAA30518.1; PID:G163050

A/Experimental source: pituitary gland

R/Author: J.A.; Whang, J.L.; Tumolo, A.; Merz, A.; Fiddes, J.C.

Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986

A/Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organization,

A/Reference number: A90924; MUID:87217066; PMID:3472745

A/Accession: A32878

A/Molecule type: mRNA

A/Residues: 3-157 <AB2>

R/Author: P.C.; Li, Y.S.; Hoffman, R.M.; Kodner, C.M.; Siegel, N.R.; Deuel, T.F.

Biochem. Biophys. Res. Commun. 165, 1096-1103, 1989

A/Title: A novel 17 KD heparin-binding growth factor (HBGF-8) in bovine uterus: purified

A/Reference number: A33784; MUID:90121211; PMID:2610682

A/Accession: A33784

A/Molecule type: protein

A/Residues: 1-14 <ML>

A/Note: demonstration of a possible alternative initiator or splice junction

R/Bertolini, J.; Hearn, M.T.W.

Mol. Cell. Endocrinol. 51, 187-199, 1987

A/Title: Isolation, characterization and tissue localization of an N-terminal-truncated

A/Reference number: A61550; MUID:87247652; PMID:3596000

A/Accession: A61550

A/Molecule type: protein

A/Residues: 16-35

R/Ueno, N.; Baird, A.; Esch, F.; Ling, N.; Guillemin, R.

Mol. Cell. Endocrinol. 49, 189-194, 1987

A/Title: Isolation and partial characterization of basic fibroblast growth factor from bo

A/Reference number: A61551; MUID:87162856; PMID:3556754

A/Accession: A61551

A/Molecule type: protein

A/Residues: 27-35, X', 37-41 <UB3>

A/Experimental source: testes

A/Note: this form appears to be identical to the renal form

R/Ueno, N.; Baird, A.; Esch, F.; Shimasaki, S.; Ling, N.; Guillemin, R.

Regul. Pept. 16, 135-145, 1986

A/Title: Purification and partial characterization of a mitogenic factor from bovine liv

A/Reference number: A60310; MUID:87119165; PMID:3809608

A/Accession: A60310

A/Molecule type: protein
 A/Residues: 23-35, 'X', 37-42 <EN>
 A/Experimental source: liver
 R/Eno, N.; Baird, A.; Esch, F.; Ling, N.; Guillemin, R.
 Biochem. Biophys. Res. Commun. 138, 580-588, 1986
 A/Title: Isolation of an amino terminal extended form of basic fibroblast growth factor.
 A/Reference number: A24819; PMID:86295737; PMID:3741423
 A/Contents: annotation
 A/Note: the amino end of this form was blocked; the peptide composition matched what was
 R/Gospodarowicz, D.; Baird, A.; Cheng, J.; Lui, G.M.; Esch, F.; Bohlen, P.
 Endocrinology 118, 82-90, 1986
 A/Title: Isolation of fibroblast growth factor from bovine adrenal gland: physicochemical
 A/Reference number: A61094; PMID:86081530; PMID:3940857
 A/Accession: A61094
 A/Molecule type: protein
 A/Residues: 12-25, 27-35, 'X', 37-40 <GOS>
 A/Experimental source: adrenal gland
 R/Esch, F.; Baird, A.; Ling, N.; Ueno, N.; Hill, F.; Dendroy, L.; Klepper, R.; Gospodarowicz, D.
 Proc. Natl. Acad. Sci. U.S.A. 82, 6507-6511, 1985
 A/Title: Primary structure of bovine pituitary basic fibroblast growth factor (bFGF) and
 A/Reference number: A01386; PMID:86016731; PMID:3663109
 A/Accession: A01386
 A/Molecule type: protein
 A/Residues: 12-157 <ESC>
 A/Experimental source: pituitary gland
 R/Baird, A.; Esch, F.; Bohlen, P.; Ling, N.; Gospodarowicz, D.
 Regul. Pept. 12, 201-213, 1985
 A/Title: Isolation and partial characterization of an endothelial cell growth factor fr
 A/Reference number: A60316; PMID:86095426; PMID:4061126
 A/Accession: A60316
 A/Molecule type: protein
 A/Residues: 27-35, 'X', 37-43 <BA1>
 A/Experimental source: kidney
 R/Bohlen, P.; Baird, A.; Esch, F.; Ling, N.; Gospodarowicz, D.
 Proc. Natl. Acad. Sci. U.S.A. 81, 5364-5368, 1984
 A/Title: Isolation and partial molecular characterization of pituitary fibroblast growth
 A/Reference number: A22054; PMID:84298139; PMID:6591194
 A/Accession: A22054
 A/Molecule type: protein
 A/Residues: 12-26 <BOH>
 C/Comment: The acidic and basic fibroblast growth factors are the major endothelial-cell
 cell types in vitro (although bFGF is 30-100 times more potent than aFGF in stimulating b
 C/Comment: This protein binds heparin more strongly than does aFGF.
 C/Superfamily: fibroblast growth factor
 C/Keywords: alternative splicing; angiogenesis; blocked amino end; growth factor; hepari
 F/1-157/Product: basic fibroblast growth factor; uterine form #status predicted <MA1>
 F/4-157/Product: basic fibroblast growth factor; pituitary gamma form #status experiment
 F/12-157/Product: basic fibroblast growth factor; pituitary alpha form #status experiment
 F/16-157/Product: basic fibroblast growth factor; pituitary short form #status predicted
 F/21-157/Product: basic fibroblast growth factor; hepatic form #status experimental <MA2>
 F/27-157/Product: basic fibroblast growth factor; renal form #status experimental
 F/29-33, 118-121/Region: heparin binding #status predicted
 F/4/Modified site: blocked amino end (Ala) (in mature form pituitary gamma) (probably ac

basic fibroblast growth factor precursor, 22.5K form - human
 N/Alternate names: bFGF; fibroblast growth factor 2; prostatic growth factor; prostatic
 N/Contains: basic fibroblast growth factor, 18K form
 C/Species: Homo sapiens (man)
 C/Date: 31-Jul-1989 #sequence revision 31-Dec-1993 #text change 21-Jul-2000
 C/Accession: A33398; A61537; A26642; B2878; S00297; A54316; B54316; A33624; A25824; B2
 R/Pras, H.; Kagehad, M.; Pras, A.C.; Klagsbrun, M.; Lelias, J.M.; Lauzun, P.; Chalon,
 Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1989
 A/Title: High molecular mass forms of basic fibroblast growth factor are initiated by a
 A/Reference number: A32398; PMID:89184522; PMID:2538817
 A/Accession: A32398
 A/Molecule type: mRNA
 A/Residues: 1-210 <PRA>
 A/Cross-references: GB:J04513; NID:G183083; PIDN:AAA52531.1; PID:G459811
 R/Shibata, F.; Baird, A.; Floorkiewicz, R.Z.
 Growth Factors 4, 277-287, 1991
 A/Title: Functional characterization of the human basic fibroblast growth factor gene F
 A/Reference number: A61537; PMID:92110035; PMID:1764264
 A/Accession: A61537
 A/Molecule type: DNA
 A/Residues: 1-114 <SH1>
 A/Note: authors translated the codon GGA for residue 47 as Ala
 R/Kurokawa, T.; Saeeda, R.; Iwane, M.; Igarashi, K.
 FEBS Lett. 213, 189-194, 1987
 A/Title: Cloning and expression of cDNA encoding human basic fibroblast growth factor.
 A/Reference number: A26642; PMID:87162468; PMID:2435575
 A/Accession: A26642
 A/Molecule type: mRNA
 A/Residues: 56-210 <KUR>
 A/Cross-references: GB:M27968; NID:G182562; PIDN:AAA52448.1; PID:G182563
 R/Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Fiddes, J.C.
 Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
 A/Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organization
 A/Reference number: A90924; PMID:87217066; PMID:1472745
 A/Accession: B32878
 A/Molecule type: mRNA
 A/Residues: 56-210 <ABR>
 A/Note: the authors translated the codon GAA for residue 108 as Gly
 R/Abraham, J.A.; Whang, J.L.; Tumolo, A.; Mergia, A.; Friedman, J.; Gospodarowicz, D.;
 EMBO J. 5, 2523-2528, 1986
 A/Title: Human basic fibroblast growth factor: nucleotide sequence and genomic organiza
 A/Reference number: S00297; PMID:87053817; PMID:3780670
 A/Accession: S00297
 A/Status: not compared with conceptual translation
 A/Molecule type: DNA
 A/Residues: 1-155 <AB2>
 A/Note: the authors translated the codon GAA for residue 108 as Gly
 R/Shimoyama, Y.; Gotch, M.; Ino, Y.; Sakamoto, M.; Kato, K.; Hirohashi, S.
 Jpn. J. Cancer Res. 82, 1263-1270, 1991
 A/Title: Characterization of high-molecular-mass forms of basic fibroblast growth factor
 A/Reference number: A54316; PMID:92091228; PMID:1721615
 A/Accession: A54316
 A/Molecule type: protein
 A/Residues: 'XX', 86-88, 'X', 90-91, 'X', 93-95 <SH3>
 A/Experimental source: C-1421 hepatocellular carcinoma cell line
 A/Note: sequence extracted from NCBI backbone (NCBIP:71595)
 A/Accession: B54316
 A/Molecule type: protein
 A/Residues: 'XXX', 19, 'X', 21-29 <SH2>
 A/Note: sequence extracted from NCBI backbone (NCBIP:71594)
 R/Felge, J.; Bradley, J.D.; Fryburg, K.; Farria, J.; Cousins, L.C.; Barr, P.J.; Bairé
 J. Cell Biol. 109, 3105-3114, 1989
 A/Title: Differential effects of heparin, fibronectin, and laminin on the phosphorylati
 A/Reference number: A33624; PMID:90078343; PMID:2592418
 A/Accession: A33624
 A/Status: preliminary
 A/Molecule type: protein
 A/Residues: 57-210 <FEF>
 R/Storj, M.T.; Esch, F.; Shimazaki, S.; Saeeda, J.; Jacobs, S.C.; Lawson, R.K.
 Biochem. Biophys. Res. Commun. 142, 702-709, 1987
 A/Title: Amino-terminal sequence of a large form of basic fibroblast growth factor isol
 A/Reference number: A25824; PMID:87156686; PMID:2435284

A/Accession: A25824
 A/Molecule type: protein
 A/Residues: 57-77 <STO>
 A/Experimental source: prostate
 R:Gimenez-Galligo, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 135, 541-548, 1986
 A/Title: Human brain-derived acidic and basic fibroblast growth factors: amino terminal
 A/Reference number: A90122; MUID:86186784; PMID:3964259
 A/Accession: B24243
 A/Molecule type: protein
 A/Residues: 65-102, 'X', 104-105 <GIM>
 A/Experimental source: brain
 R:Gautschi, P.; Frazer-Schroder, M.; Bohlén, P.
 FEBS Lett. 204, 203-207, 1986
 A/Title: Partial molecular characterization of endothelial cell micogens from human brain
 A/Reference number: A91364; MUID:86275260; PMID:3732516
 A/Accession: B24301
 A/Molecule type: protein
 A/Residues: 65-88, 'X', 90-98, 'X', 100 <GAU>
 R:Sommer, A.; Brewer, M.T.; Thompson, R.C.; Moscatelli, D.; Presta, M.; Rifkin, D.B.
 Biochem. Biophys. Res. Commun. 144, 543-550, 1987
 A/Title: A form of human basic fibroblast growth factor with an extended amino terminus
 A/Reference number: S42242; MUID:87213238; PMID:3579930
 A/Accession: S42242
 A/Status: preliminary
 A/Molecule type: mRNA
 A/Residues: 54-210 <SOM>
 A/Cross-references: EMBL:M17599; NID:G183086; PIDN:AA52534.1; PID:G183087
 R:Panciolano, M.W.; Horlick, R.A.; Springer, B.A.; Van Dyk, D.E.; Tobey, T.; Wetmore, D.
 Biochemistry 33, 10229-10248, 1994
 A/Title: Multivalent ligand-receptor binding interactions in the fibroblast growth factor
 A/Reference number: A55784; MUID:94347757; PMID:7520751
 A/Accession: B55784
 A/Molecule type: protein
 A/Residues: 54-71 <PAN>
 R:Watson, R.; Anthony, F.; Pickett, M.; Lambden, P.; Masson, G.M.; Thomas, E.J.
 Biochem. Biophys. Res. Commun. 187, 1227-1231, 1992
 A/Title: Reverse transcription with nested polymerase chain reaction shows expression of
 A/clients.
 A/Reference number: I52267; MUID:93038590; PMID:1417798
 A/Accession: I52267
 A/Status: preliminary; translated from GB/EMBL/DBJ
 A/Molecule type: mRNA
 A/Residues: 95-182 <RES>
 A/Cross-references: GB:S47380; NID:G256535; PIDN:AA013853.1; PID:G4261553
 A/Experimental source: granulosa cells
 R:Patry, V.; Buglar, B.; Amalric, F.; Prome, J.C.; Prats, H.
 FEBS Lett. 349, 23-28, 1994
 A/Title: Purification and characterization of the 210-amino acid recombinant basic fibro
 A/Reference number: S46253; MUID:94320639; PMID:8045296
 A/Accession: S46253
 A/Molecule type: protein
 A/Residues: 39-53; 65-88 <PAT>
 A/Note: recombinant gene expressed in Escherichia coli
 C/Genetics:
 A/Gene: GDB:FGF2, FGFB
 A/Cross-references: GDB:119910; OMIM:134920
 A/Map position: 4q25-4q27
 A/Start codon: CTG
 C/Superfamily: fibroblast growth factor
 C/Keywords: alternative initiators; angiogenesis; growth factor; heparin binding; mitoge
 F/1-210/Product: basic fibroblast growth factor, 22.5K form #status predicted <MA>
 F/65-210/Product: basic fibroblast growth factor, 18K form #status predicted <MAT>
 F/82-86/Region: heparin binding #status predicted
 F/171-174/Region: heparin binding #status predicted

Query Match 98.7%; Score 817; DB 2; Length 210;
 Best Local Similarity 98.7%; Pred. No. 1,4e-73;
 Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

OY 1 MAAGSITTLPALPEDGSGAFPPGKFKDRLKLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
 DB 56 MAAGSITTLPALPEDGSGAFPPGKFKDRLKLYCKNGGFFLRHPDGRVDGVRKSDPHI 115

OY 61 KLOLAERGVSVIKGCANRYLAMKEDGRLLASKCVTBCEFFERLESNNYTYRSRY 120
 DB 116 KLOLAERGVSVIKGCANRYLAMKEDGRLLASKCVTBCEFFERLESNNYTYRSRY 175

OY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 DB 176 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 210

RESULT 3
 A31674
 basic fibroblast growth factor precursor - rat
 N/Alternate names: bFGF
 C/Species: Rattus norvegicus (Norway rat)
 C/Date: 21-May-1990 #sequence_revision 21-May-1990 #text_change 16-Jul-1999
 C/Accession: A31674; S00876; S24309
 R:Shimasaki, S.; Emoto, N.; Koba, A.; Mercado, M.; Shibata, F.; Cocksey, K.; Baird, A.;
 Biochem. Biophys. Res. Commun. 157, 256-263, 1988
 A/Title: Complementary DNA cloning and sequencing of rat ovarian basic fibroblast growth
 A/Reference number: A31674; MUID:89061721; PMID:3196337
 A/Accession: A31674
 A/Molecule type: mRNA
 A/Residues: 1-154 <SHI>
 A/Cross-references: GB:M2427; NID:G204285; PIDN:AAA41210.1; PID:G204286
 R:Kurokawa, T.; Seno, M.; Igarashi, K.
 Nucleic Acids Res. 16, 5201, 1988
 A/Title: Nucleotide sequence of rat basic fibroblast growth factor cDNA.
 A/Reference number: S00876; MUID:88262516; PMID:3387229
 A/Accession: S00876
 A/Molecule type: mRNA
 A/Residues: 1-154 <KUR>
 A/Cross-references: EMBL:X07285; NID:G56203; PIDN:CAA30265.1; PID:G56204
 R:El-Husseini, A.E.D.; Paterson, J.A.; Myal, Y.; Shiu, R.P.C.
 Biochim. Biophys. Acta 1131, 314-316, 1992
 A/Title: PCR detection of the rat brain basic fibroblast growth factor (bFGF) mRNA conta
 A/Reference number: S24309; MUID:92329546; PMID:1378302
 A/Accession: S24309
 A/Status: preliminary; translation not shown
 A/Molecule type: mRNA
 A/Residues: 35-154 <ELH>
 A/Cross-references: EMBL:X61697; NID:G56143; PIDN:CAA43863.1; PID:G56144
 C/Superfamily: fibroblast growth factor
 C/Keywords: growth factor
 F/1-9/Product: signal sequence #status predicted <SIG>
 F/10-154/Product: basic fibroblast growth factor #status predicted <MAT>

Query Match 96.2%; Score 796.5; DB 2; Length 154;
 Best Local Similarity 96.8%; Pred. No. 1.1e-71;
 Matches 150; Conservative 3; Mismatches 1; Indels 1; Gaps 1;

OY 1 MAAGSITTLPALPEDGSGAFPPGKFKDRLKLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPPGKFKDRLKLYCKNGGFFLRHPDGRVDGVRKSDPHI 59

OY 61 KLOLAERGVSVIKGCANRYLAMKEDGRLLASKCVTBCEFFERLESNNYTYRSRY 120
 DB 120 SSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 154

OY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 DB 60 KLOLAERGVSVIKGCANRYLAMKEDGRLLASKCVTBCEFFERLESNNYTYRSRY 119

RESULT 4
 C37360
 basic fibroblast growth factor - mouse
 C/Species: Mus musculus (house mouse)
 C/Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
 C/Accession: C37360
 R:Hebert, J.M.; Basilio, C.; Goldfarb, M.; Haub, O.; Martin, G.R.
 Dev. Biol. 138, 454-463, 1990
 A/Title: Isolation of cDNAs encoding four mouse FGF family members and characterization

A:Reference number: A37360; MUID:90201563; PMID:2318933
 A:Accession: C37360
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-154 <HEB>
 A:Cross-references: GB:M30644; NID:9193296; PIDN:AAA37621.1; PID:9309239
 C:Superfamily: fibroblast growth factor

Query Match 94.4%; Score 781.5; DB 2; Length 154;
 Best Local Similarity 94.8%; Pred. No. 3.3e-70;
 Matches 147; Conservative 4; Mismatches 3; Indels 1; Gaps 1;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 60
 DB 1 MAASGITSIPALPEDGGA-APPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHV 59
 QY 61 KIQLOAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKY 120
 DB 60 KIQLOAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKY 119
 QY 121 SSMVVALKRTGQYKLGPTGPGOKAILFLPMSAKS 155
 DB 120 SSMVVALKRTGQYKLGPTGPGOKAILFLPMSAKS 154

RESULT 5

basic fibroblast growth factor - sheep

N:Alternate names: procatropin
 C:Species: Ovis orientalis aries; Ovis ammon aries (domestic sheep)
 C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
 C:Accession: S00185
 R:Simpson, R.J.; Moritz, R.L.; Lloyd, C.J.; Fabril, L.J.; Nice, E.C.; Rubira, M.R.; Burge
 FEBS Lett. 224, 128-132, 1987
 A:Title: Primary structure of ovine pituitary basic fibroblast growth factor.
 A:Reference number: S00185; MUID:86055577; PMID:3678486
 A:Accession: S00185
 A:Molecule type: protein
 A:Residues: 1-146 <SIM>
 C:Superfamily: fibroblast growth factor
 C:Keywords: growth factor; heparin binding; mitogen
 F:18-22/Region: heparin binding #status predicted
 F:107-110/Region: heparin binding #status predicted

Query Match 94.3%; Score 781; DB 1; Length 146;
 Best Local Similarity 99.3%; Pred. No. 3.5e-70;
 Matches 145; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 10 PALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHIKIQLOAEER 69
 DB 1 PALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHIKIQLOAEER 60
 QY 70 GVVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKYSSWYVALK 129
 DB 61 GVVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKYSSWYVALK 120
 QY 130 TGOYKLGPTGPGOKAILFLPMSAKS 155
 DB 121 TGOYKLGPTGPGOKAILFLPMSAKS 146

RESULT 6

basic fibroblast growth factor - chicken

C:Species: Gallus gallus (chicken)
 C:Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 16-Jul-1999
 C:Accession: A48834; S23636
 R:Bojia, A.Z.; Meijers, C.; Zeller, R.
 Dev. Biol. 157, 110-118, 1993
 A:Title: Expression of alternatively spliced bFGF first coding exons and antisense mRNA
 A:Reference number: A48834; MUID:93246053; PMID:7683281
 A:Accession: A48834
 A:Status: preliminary

A:Molecule type: nucleic acid

A:Residues: 1-189 <BOR>
 A:Experimental source: embryo
 A:Note: sequence extracted from NCBI backbone (NCBI:131000, NCBI:131001)
 R:Miltram, E.; Grunbaum, Y.; Shohat, H.; Ziv, T.
 Development 109, 387-393, 1990
 A:Title: Fibroblast growth factor during mesoderm induction in the early chick embryo.
 A:Reference number: S23636; MUID:90382254; PMID:2401202
 A:Accession: S23636
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 95-128 <MT>
 A:Cross-references: EMBL:X56804; NID:962855; PIDN:CAA40139.1; PID:962856
 C:Superfamily: fibroblast growth factor

Query Match 93.0%; Score 770; DB 2; Length 189;
 Best Local Similarity 93.5%; Pred. No. 5.7e-69;
 Matches 144; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 2 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 61
 DB 36 MAAGSITTLPALPDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 95
 QY 62 IQLOAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKY 121
 DB 96 IQLOAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKY 155
 QY 122 SSMVVALKRTGQYKLGPTGPGOKAILFLPMSAKS 155
 DB 156 SSMVVALKRTGQYKLGPTGPGOKAILFLPMSAKS 189

RESULT 7

basic fibroblast growth factor - short-tailed opossum (Monodelphis domestica) (fragment

C:Species: Monodelphis domestica
 C:Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 12-Apr-1995
 R:Kuswilt, D.F.; Sabourin, C.L.K.; Budge, C.L.; Ley, R.D.
 submitted to the EMBL Data Library, September 1992
 A:Description: Characterization of cDNA encoding basic fibroblast growth factor of the
 A:Reference number: S31622
 A:Accession: S31622
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-164 <KUS>
 A:Cross-references: EMBL:Z15154
 C:Superfamily: fibroblast growth factor

Query Match 91.6%; Score 758.5; DB 2; Length 164;
 Best Local Similarity 92.9%; Pred. No. 6.7e-68;
 Matches 145; Conservative 4; Mismatches 6; Indels 1; Gaps 1;

QY 1 MAAGSITTLPALPED-GSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPH 59
 DB 9 MAAGSITTLPALSGGGGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGIREKSDPH 68
 QY 60 IKLOAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKY 119
 DB 69 IKLOAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFPERLESNNNTYRSRKY 128
 QY 120 YSMVVALKRTGQYKLGPTGPGOKAILFLPMSAKS 155
 DB 129 YSMVVALKRTGQYKLGPTGPGOKAILFLPMSAKS 164

RESULT 8

fibroblast growth factor - rabbit (fragment)

C:Species: Oryctolagus cuniculus (domestic rabbit)
 C:Date: 14-Feb-1997 #sequence_revision 14-Feb-1997 #text_change 16-Jul-1999
 C:Accession: I46711
 R:Winkler, J.A.; Friesel, R.; Alberts, G.F.; Janat, M.F.; Liao, G.

Am. J. Pathol. 143, 518-527, 1993
 A>Title: Elevated expression of basic fibroblast growth factor in an immortalized rabbit
 A/Reference number: 146711; MUID:93343209; PMID:8342599
 A/Accession: 146711
 A/Status: preliminary; translated from GB/EMBL/DBJ
 A/Molecule type: mRNA
 A/Residues: 1-137 <MIN>
 A/Cross-references: GB:112034; NID:G165014; PIDN:AAA31248.1; PID:G165015
 C/Superfamily: fibroblast growth factor

Query Match 88.9%; Score 736; DB 2; Length 137;
 Best Local Similarity 99.3%; Pred. No. 9.4e-66;
 Matches 136; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 10 PALPEDGGGAFPPGHPKPKRLYCKNGGFLLRHPDGRVDGVREKSDPHIKLOAEER 69
 Db 1 PALPEDGGGAFPPGHPKPKRLYCKNGGFLLRHPDGRVDGVREKSDPHIKLOAEER 60

QY 70 GVSIVGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRYSSWYVALKR 129
 Db 61 GVSIVGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRYSSWYVALKR 120

QY 130 TGGYKLGPKTGPQKAI 146
 Db 121 TGGYKLGSKTGPQKAI 137

RESULT 9

A40117 basic fibroblast growth factor - African clawed frog

C/Species: Xenopus laevis (African clawed frog)
 C/Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999

A/Accession: A40117; A29618
 R/Kliman, D.; Abraham, J.A.; Haaparanta, T.; Palisi, T.M.; Kirschner, M.W.
 Science 242, 1053-1056, 1988

A>Title: The presence of fibroblast growth factor in the frog egg: its role as a natural
 A/Reference number: A40117; MUID:89058621; PMID:3194757

A/Accession: A40117
 A/Status: preliminary

A/Molecule type: mRNA
 A/Residues: 1-155 <MIN>

A/Cross-references: GB:M18067; NID:G214177; PIDN:AAA49726.1; PID:G214178; GB:M21092
 R/Kliman, D.; Kirschner, M.

Cell 51, 869-877, 1987

A>Title: Synergistic induction of mesoderm by FGF and TGF-beta and the identification of
 A/Reference number: A29618; MUID:88052890; PMID:3479265

A/Accession: A29618
 A/Molecule type: mRNA

A/Residues: 95-110,112-155 <K12>
 C/Superfamily: fibroblast growth factor

C/Keywords: growth factor

Query Match 82.7%; Score 685; DB 1; Length 155;
 Best Local Similarity 83.9%; Pred. No. 1.2e-60;
 Matches 130; Conservative 8; Mismatches 17; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGGGAFPPGHPKPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 Db 1 MAAGSITTLPRESDEGNTPEPSFGSKPKRLYCKNGGFLLRHPDGRVDGSRDSDSHI 60

QY 61 KLOQAEERGVSVIKGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRY 120
 Db 61 KLOQAEERGVSVIKGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRY 120

QY 121 SSWYVALKRTGOYKLGPKTGPQKAI 155
 Db 121 SSWYVALKRTGOYKLGPKTGPQKAI 155

RESULT 10

A32484 basic fibroblast growth factor precursor, 25K - guinea pig (fragments)

C/Species: Cavia porcellus (guinea pig)

C/Date: 20-Oct-1989 #sequence_revision 20-Oct-1989 #text_change 15-Jun-1996
 C/Accession: A32484
 R/Sommer, A.; Moscatelli, D.; Rifkin, D.B.
 Biochem. Biophys. Res. Commun. 160, 1267-1274, 1989
 A>Title: An amino-terminally extended and post-translationally modified form of a 25KD bc
 A/Reference number: A32484; MUID:89273588; PMID:2730645
 A/Accession: A32484
 A/Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
 A/Molecule type: mRNA
 A/Residues: 1-125 <SOM>
 C/Superfamily: fibroblast growth factor

Query Match 56.3%; Score 466.5; DB 2; Length 125;
 Best Local Similarity 63.2%; Pred. No. 4.6e-39;
 Matches 98; Conservative 1; Mismatches 5; Indels 51; Gaps 3;

QY 1 MAAGSITTLPALPEDGGGAFPPGHPKPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 Db 22 MAAGSITTLPALPEDGGGAFPPGHPKPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 57

QY 61 KLOQAEERGVSVIKGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRY 120
 Db 58 KLOQAEERGVSVIKGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRY 90

QY 121 SSWYVALKRTGOYKLGPKTGPQKAI 155
 Db 91 SSWYVALKRTGOYKLGPKTGPQKAI 125

RESULT 11

A60721

acidic fibroblast growth factor - golden hamster

N/Alternate names: heparin-binding growth factor 1

C/Species: Mesocricetus auratus (golden hamster)
 C/Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999

A/Accession: A60721

J/Hall, J.A.; Harris, M.A.; Malark, M.; Mansson, P.E.; Zhou, H.; Harris, S.E.
 J. Cell. Biochem. 43, 17-26, 1990

A>Title: Characterization of the hamster DDT-1 cell aFGF/HBGF-I gene and cDNA and its mo
 A/Reference number: A60721; MUID:90270291; PMID:1693366

A/Accession: A60721
 A/Status: not compared with conceptual translation

A/Molecule type: DNA
 A/Residues: 1-155 <HAL>

C/Superfamily: fibroblast growth factor
 C/Keywords: growth factor; heparin binding

Query Match 51.6%; Score 427.5; DB 1; Length 155;
 Best Local Similarity 55.4%; Pred. No. 4.3e-35;
 Matches 87; Conservative 17; Mismatches 48; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGGGAFPPGHPKPKRLYCKNGGFLLRHPDGRVDGVREKSDPHI 60
 Db 1 MAAGSITTLFSLTRFN---LPENYKPKRLYCSNGHFLRHPDGTGTRDRSDSHI 57

QY 61 KLOQAEERGVSVIKGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRY 120
 Db 58 KLOQAEERGVSVIKGVCANRYLAKMEDGRLASKCVTDECFEERLESNNNTYRSRY 117

QY 121 S-SWYVALKRTGOYKLGPKTGPQKAI 155
 Db 118 AEXMFWGLKNGSKGKGRPHYGOXKAI 154

RESULT 12

A60130

acidic fibroblast growth factor - chicken

N/Alternate names: endothelial cell growth factor
 C/Species: Gallus gallus (chicken)
 C/Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 16-Jul-1999

C/Accession: A60130; S02639
 R/Schuerch, H.; Risseu, W.
 Development 111, 1143-1154, 1991

A>Title: Differentiating and mature neurons express the acidic fibroblast growth factor
 A/Reference number: A60130; UID:91347925; PMID:1715259
 A/Accession: A60130
 A/Status: preliminary
 A/Molecule type: mRNA
 A/Residues: 1-155 <SCH>
 A/Cross-references: GB:S63263; NID:q234372; PIDN:AA19629.1; PID:q234373
 R/Rsau, W.; Gautschi-Sova, P.; Boehlen, P.
 EMBO J. 7, 959-962, 1988
 A>Title: Endothelial cell growth factors in embryonic and adult chick brain are related
 A/Reference number: S02639; UID:88296438; PMID:3402441
 A/Accession: S02639
 A/Molecule type: protein
 A/Residues: 22-30, 'X', 32-44, 'X', 46-48 <RIS>
 A/Superfamily: fibroblast growth factor
 C/Keywords: growth factor

Query Match 50.7%; Score 419.5; DB 2; Length 155;
 Best Local Similarity 55.6%; Pred. No. 2, 7e-34;
 Matches 85; Conservative 21; Mismatches 42; Indels 5; Gaps 2;

QY 1 MAAGSTTLPALPEDGGGAFPPGHFKDPKRLCYCKNGGFLRLHPDGRVDGVREKSDPHI 60
 DB 1 MAGEITTFALITERFG--LPLGNVKKPKLTYCSNGHFLRIPDKVDGTRDSQDI 57
 QY 61 KLOLOAEERGVVSIKGCARRYLAMKDGSLASKCVTDCEFFERLESNNYTRRKY 120
 DB 58 QLOLSADVEVYIKSTASQGYLAMDNGLYGSQLPGECLFLERLENNHYNTYISKH 117
 QY 121 S--SMVYALKRTGQYKLGPKTGPOKALIFLPM 151
 DB 118 ADKNFVGLKKNGNSKLGPRTHYGOKALIFLPL 150

RESULT 13
 A33665
 A/Cross-references: GB:M30491
 R/Wang, W.P.; Lehtoma, K.; Varban, M.L.; Krishnan, I.; Chiu, I.M.
 Mol. Cell. Biol. 9, 2387-2395, 1989
 A>Title: Cloning of the gene coding for human class I heparin-binding growth factor and
 A/Reference number: A32316; UID:89343957; PMID:2474753
 A/Accession: A32316
 A/Molecule type: DNA
 A/Residues: 1-155 <MER>
 A/Cross-references: GB:M23087; NID:q183875; PIDN:AA52638.1; PID:g386768
 R/Wang, W.P.; Quick, D.; Balcerzak, S.P.; Needleman, S.W.; Chiu, I.M.
 Oncogene 6, 1521-1529, 1991
 A>Title: Cloning and sequence analysis of the human acidic fibroblast growth factor gene
 A/Reference number: S18217; UID:92019819; PMID:1717925
 A/Accession: S18217
 A/Molecule type: DNA
 A/Residues: 1-155 <MA2>
 A/Cross-references: EMBL:M23086
 R/Chiu, I.M.; Wang, W.P.; Lehtoma, K.
 Oncogene 5, 755-762, 1990
 A>Title: Alternative splicing generates two forms of mRNA coding for human heparin-binding
 A/Reference number: A43804; UID:90265618; PMID:1693186
 A/Accession: A43804
 A/Molecule type: mRNA
 A/Residues: 1-155 <CHI>
 A/Cross-references: EMBL:X51943; NID:g32435; PIDN:CAA56206.1; PID:g32436

R/Jaye, M.; Howk, R.; Burgess, W.; Ricca, G.A.; Chiu, I.M.; Ravera, M.W.; O'Brien, S.J.
 Science 233, 541-545, 1986
 A>Title: Human endothelial cell growth factor: cloning, nucleotide sequence, and chromo
 A/Reference number: A24662; UID:86261805; PMID:3523736
 A/Accession: A24662
 A/Molecule type: mRNA
 A/Residues: 1-155 <JAY>
 A/Cross-references: GB:M13361; NID:g181941; PIDN:AA579245.1; PID:g181942
 R/Xu, Y.L.; Kha, H.; Golden, J.A.; Mischak, A.A.; Goetzl, E.J.; Truck, C.M.
 J. Exp. Med. 175, 1073-1080, 1992
 A>Title: An acidic fibroblast growth factor protein generated by alternate splicing act
 A/Reference number: JH0707; UID:92202857; PMID:1372643
 A/Accession: JH0707
 A/Molecule type: mRNA
 A/Residues: 1-155 <YU>
 A/Cross-references: GB:X65778; NID:g396163; PIDN:CAA46661.1; PID:g396164
 R/Payson, R.A.; Canatan, H.; Chocan, M.A.; Wang, W.P.; Harris, S.E.; Myers, R.L.; Chiu
 Nucleic Acids Res. 21, 489-495, 1993
 A>Title: Cloning of two novel forms of human acidic fibroblast growth factor (aFGF) mRN
 A/Reference number: S35535; UID:93181239; PMID:7680120
 A/Accession: S35535
 A/Status: translation not shown
 A/Molecule type: mRNA
 A/Residues: 1-58 <PAY>
 A/Cross-references: GB:L01485
 A/Accession: S35536
 A/Status: translation not shown
 A/Molecule type: mRNA
 A/Residues: 1-58 <PA2>
 A/Cross-references: GB:L01487
 R/Chumley, G.; Dionne, C.A.; Jaye, M.
 Biochem. Biophys. Res. Commun. 171, 7-13, 1990
 A>Title: The gene for human acidic fibroblast growth factor encodes two upstream exons
 A/Reference number: I39412; UID:90365758; PMID:2393407
 A/Accession: I39412
 A/Status: translation not shown
 A/Molecule type: mRNA
 A/Residues: 1-40 <RES>
 A/Cross-references: GB:M60515; NID:g178226; PIDN:AA51672.1; PID:g553170; GB:M60516; NI
 R/Harper, J.W.; Strydom, D.J.; Lobb, R.R.
 Biochemistry 25, 4097-4103, 1986
 A/Reference number: A23553; UID:86296647; PMID:2427112
 A/Accession: A23553
 A/Molecule type: protein
 A/Residues: 16-155 <HAR>
 R/Gimenez-Galligo, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 138, 611-617, 1986
 A>Title: The complete amino acid sequence of human brain-derived acidic fibroblast grow
 A/Reference number: A24820; UID:86295741; PMID:3527167
 A/Accession: A24820
 A/Molecule type: protein
 A/Residues: 16-155 <GIM>
 R/Gimenez-Galligo, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 135, 541-548, 1986
 A>Title: Human brain-derived acidic and basic fibroblast growth factors: amino terminal
 A/Reference number: A90122; UID:86186784; PMID:3964259
 A/Accession: A24243
 A/Molecule type: protein
 A/Residues: 16-47 <G12>
 A/Experimental source: brain
 R/Gautschi, P.; Frater-Schroder, M.; Bohlen, P.
 FEBS Lett. 204, 203-207, 1986
 A>Title: Partial molecular characterization of endothelial cell mitogens from human bra
 A/Reference number: A91364; UID:86275560; PMID:3732516
 A/Accession: A24301
 A/Molecule type: protein
 A/Residues: 16-30, 'X', 32-49 <GAU>
 R/Gautschi-Sova, P.; Muller, T.; Bohlen, P.
 Biochem. Biophys. Res. Commun. 140, 874-880, 1986
 A>Title: Amino acid sequence of human acidic fibroblast growth factor.
 A/Reference number: A26386; UID:87048871; PMID:3778488
 A/Accession: A26386
 A/Molecule type: protein

A:Residues: 16-155 <GA2>
 A:Experimental source: brain
 R:Chavan, A.J.; Haley, B.E.; Volkin, D.B.; Marfia, K.E.; Verticelli, A.M.; Bruner, M.W.;
 Biochemistry 33, 7193-7202, 1994
 C:Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
 C:Accession: D37360; J05231
 R:Hebert, J.M.; Basillco, C.; Goldfarb, M.; Haub, O.; Martin, G.R.
 Dev. Biol. 138, 454-463, 1990
 A:Title: Isolation of cDNAs encoding four mouse FGF family members and characterization
 A:Reference number: A37360; MUID:90201563; PMID:2318343
 A:Accession: D37360
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-155 <HEB>
 A:Cross-references: GB:M30641; NID:9193284; PIDN:AAA37618.1; PID:G309236
 R:Madai, F.; Hackshaw, K.V.; Chiu, I.M.
 Gene 179, 231-236, 1996
 A:Title: Cloning and characterization of the mouse Fgf-1 gene.
 A:Reference number: J05231; MUID:97128312; PMID:8972905
 A:Accession: J05231
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-155 <MAD>
 A:Cross-references: GB:U36456
 C:Comment: This protein is an inducer of neovascularization in angiogenic disease includ
 A:Gene: Fgf-1
 A:introns: 57/1, 91/3
 C:Superfamily: fibroblast growth factor

Query Match 50.5%; Score 418.5; DB 1; Length 155;
 Best Local Similarity 54.8%; Pred. No. 3,4e-34;

Matches 86; Conservative 17; Mismatches 49; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPRKLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
 Db 1 MAEGITTFALITERFN--LPLGNVKKPKLLYCSNGGHFLRILPDGTVDGTRSDQHI 57
 QY 61 KLOLOAEERGVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 Db 58 QLOLSAESAGEVYIKETGTGYLAMDTGGLYGSQTPEBCLFLERLENNHYNTYRSKH 117
 QY 121 S--SWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 Db 118 AEKNWFGVGLKNGSCRGPRTHYGQKAILFLPLPVSS 154

RESULT 14

S04147

acidic fibroblast growth factor 1 - rat

N:Alternate names: heparin-binding growth factor 1

C:Species: Rattus norvegicus (Norway rat)

C:Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 16-Jul-1999

C:Accession: S04147

R:Goodrich, S.P.; Yan, G.C.; Bahrenburg, K.; Mansson, P.E.

Nucleic Acids Res. 17, 2867, 1989

A:Title: The nucleotide sequence of rat heparin binding growth factor 1 (HBGF-1).

A:Reference number: S04147; MUID:89240051; PMID:2470029

A:Accession: S04147

A:Molecule type: mRNA

A:Residues: 1-155 <GOO>

A:Cross-references: EMBL:X14232; NID:956351; PIDN:CAA32448.1; PID:956352

C:Superfamily: fibroblast growth factor

C:Keywords: growth factor; heparin binding

Query Match 49.9%; Score 413.5; DB 2; Length 155;
 Best Local Similarity 54.1%; Pred. No. 1.1e-33;
 Matches 85; Conservative 18; Mismatches 49; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPRKLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
 Db 1 MAEGITTFALITERFN--LPLGNVKKPKLLYCSNGGHFLRILPDGTVDGTRSDQHI 57
 QY 61 KLOLOAEERGVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 Db 58 QLOLSAESAGEVYIKETGTGYLAMDTGGLYGSQTPEBCLFLERLENNHYNTYRSKH 117
 QY 121 S--SWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 Db 118 AEKNWFGVGLKNGSCRGPRTHYGQKAILFLPLPVSS 154

RESULT 15
 D37360

acidic fibroblast growth factor - mouse
 N:Alternate names: aFGF; FGF-1
 C:Species: Mus musculus (house mouse)
 C:Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
 C:Accession: D37360; J05231
 R:Hebert, J.M.; Basillco, C.; Goldfarb, M.; Haub, O.; Martin, G.R.
 Dev. Biol. 138, 454-463, 1990
 A:Title: Isolation of cDNAs encoding four mouse FGF family members and characterization
 A:Reference number: A37360; MUID:90201563; PMID:2318343
 A:Accession: D37360
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-155 <HEB>
 A:Cross-references: GB:M30641; NID:9193284; PIDN:AAA37618.1; PID:G309236
 R:Madai, F.; Hackshaw, K.V.; Chiu, I.M.
 Gene 179, 231-236, 1996
 A:Title: Cloning and characterization of the mouse Fgf-1 gene.
 A:Reference number: J05231; MUID:97128312; PMID:8972905
 A:Accession: J05231
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-155 <MAD>
 A:Cross-references: GB:U36456
 C:Comment: This protein is an inducer of neovascularization in angiogenic disease includ
 A:Gene: Fgf-1
 A:introns: 57/1, 91/3
 C:Superfamily: fibroblast growth factor

Query Match 49.9%; Score 413.5; DB 2; Length 155;
 Best Local Similarity 54.1%; Pred. No. 1.1e-33;

Matches 85; Conservative 18; Mismatches 49; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPRKLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
 Db 1 MAEGITTFALITERFN--LPLGNVKKPKLLYCSNGGHFLRILPDGTVDGTRSDQHI 57
 QY 61 KLOLOAEERGVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 Db 58 QLOLSAESAGEVYIKETGTGYLAMDTGGLYGSQTPEBCLFLERLENNHYNTYRSKH 117
 QY 121 S--SWYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
 Db 118 AEKNWFGVGLKNGSCRGPRTHYGQKAILFLPLPVSS 154

Search completed: December 16, 2002, 17:56:09
 Job time : 14.5 secs

GenCore version 5.1.3
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OW protein - protein search, using sw model

Run on: December 16, 2002, 17:54:01 ; Search time 8.5 Seconds

(without alignments)
756.333 Million cell updates/sec

Title: 'US-09-886-856-6

Perfect score: 828

Sequence: 1 MAGSITLPALEDCGSGA.....GPKTGGKALFLPMASAKS 155

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database: SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-------------|
| 1 | 828 | 100.0 | 155 | 1 | FGF2_BOVIN |
| 2 | 822 | 99.3 | 155 | 1 | FGF2_SHEEP |
| 3 | 817 | 98.7 | 155 | 1 | FGF2_HUMAN |
| 4 | 796.5 | 96.2 | 154 | 1 | FGF2_RAT |
| 5 | 781.5 | 94.4 | 154 | 1 | FGF2_MOUSE |
| 6 | 770 | 93.0 | 158 | 1 | FGF2_CHICK |
| 7 | 758.5 | 91.6 | 156 | 1 | FGF2_MONDO |
| 8 | 736 | 88.9 | 137 | 1 | FGF2_RABIT |
| 9 | 685 | 82.7 | 155 | 1 | FGF2_XENTLA |
| 10 | 427.5 | 51.6 | 155 | 1 | FGF1_MESAU |
| 11 | 419.5 | 50.7 | 155 | 1 | FGF1_CHICK |
| 12 | 418.5 | 50.5 | 155 | 1 | FGF1_HUMAN |
| 13 | 413.5 | 49.9 | 155 | 1 | FGF1_MOUSE |
| 14 | 412.5 | 49.8 | 152 | 1 | FGF1_PIG |
| 15 | 402.5 | 48.6 | 155 | 1 | FGF1_BOVIN |
| 16 | 262 | 31.6 | 184 | 1 | FGF4_CHICK |
| 17 | 252.5 | 30.5 | 206 | 1 | FGF4_HUMAN |
| 18 | 252 | 30.4 | 256 | 1 | FGF3_BRARE |
| 19 | 250.5 | 30.3 | 264 | 1 | FGF5_MOUSE |
| 20 | 250.5 | 30.3 | 266 | 1 | FGF5_RAT |
| 21 | 249 | 30.1 | 220 | 1 | FGF3_CHICK |
| 22 | 245.5 | 29.6 | 206 | 1 | FGF4_BOVIN |
| 23 | 245 | 29.6 | 208 | 1 | FGF6_HUMAN |
| 24 | 245 | 29.6 | 208 | 1 | FGF6_MOUSE |
| 25 | 242 | 29.2 | 268 | 1 | FGF5_HUMAN |
| 26 | 238.5 | 28.8 | 202 | 1 | FGF4_MOUSE |
| 27 | 235 | 28.5 | 187 | 1 | FGF4_XENTLA |
| 28 | 235.5 | 28.4 | 237 | 1 | FGF3_XENTLA |
| 29 | 235 | 28.4 | 245 | 1 | FGF3_HUMAN |
| 30 | 234 | 28.3 | 239 | 1 | FGF3_MOUSE |
| 31 | 231.5 | 28.0 | 192 | 1 | FGF8_HUMAN |
| 32 | 216 | 26.1 | 208 | 1 | FGF9_HUMAN |
| 33 | 216 | 26.1 | 208 | 1 | FGF9_MOUSE |

| | | | | | | | |
|----|-------|------|-----|---|-------------|--------|-------------|
| 34 | 216 | 26.1 | 208 | 1 | FGF9_RAT | P36364 | rattus norv |
| 35 | 212 | 25.6 | 209 | 1 | FGF9_XENTLA | Q91875 | xenopus lae |
| 36 | 209 | 25.2 | 211 | 1 | FGFR_HUMAN | O9NP95 | homo sapien |
| 37 | 206.5 | 24.9 | 207 | 1 | FGFR_RAT | O54769 | rattus norv |
| 38 | 205.5 | 24.8 | 194 | 1 | FGF7_CANFA | P79150 | canis fam11 |
| 39 | 205.5 | 24.8 | 207 | 1 | FGF6_HUMAN | O43320 | homo sapien |
| 40 | 204.5 | 24.7 | 194 | 1 | FGF7_MOUSE | P36363 | mus muscicu |
| 41 | 203 | 24.5 | 208 | 1 | FGFA_HUMAN | O15520 | homo sapien |
| 42 | 203 | 24.5 | 215 | 1 | FGFA_RAT | P70492 | rattus norv |
| 43 | 202.5 | 24.5 | 194 | 1 | FGF7_HUMAN | P21781 | homo sapien |
| 44 | 202.5 | 24.5 | 194 | 1 | FGF7_SHEEP | P48808 | ovis aries |
| 45 | 200 | 24.2 | 209 | 1 | FGFA_MOUSE | O35565 | mus muscicu |

ALIGNMENTS

| RESULT 1 | FGF2_BOVIN | STANDARD; | PRT; | 155 AA. |
|----------|--|-----------|------|---------|
| AC | P03969 | | | |
| DT | 23-OCT-1986 (Rel. 02, Created) | | | |
| DT | 23-OCT-1986 (Rel. 02, Last sequence update) | | | |
| DT | 15-JUN-2002 (Rel. 41, Last annotation update) | | | |
| DE | Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BRGF) (Prostate tropin) [Contains: Kidney-derived growth factor] | | | |
| DE | FGF2 OR FGF-2. | | | |
| GN | Bos taurus (Bovinae). | | | |
| OS | Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi; | | | |
| OC | Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; | | | |
| OC | Bovidae; Bovinae; Bos. | | | |
| OX | NCBI_TaxID=9913; | | | |
| RN | [1] | | | |
| RP | SEQUENCE FROM N.A. | | | |
| RX | MEDLINE=86261806; PubMed=2425435; | | | |
| RA | Abramham J.A., Mergia A., Whang J.L., Tumolo A., Friedman J., | | | |
| RA | Hjertield K.A., Gospodarowicz D., Fiddes J.C.; | | | |
| RT | "Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic fibroblast growth factor." | | | |
| RL | Science 233:545-548 (1986). | | | |
| RN | [2] | | | |
| RP | SEQUENCE FROM N.A. | | | |
| RX | MEDLINE=87217066; PubMed=3472745; | | | |
| RA | Abramham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.; | | | |
| RT | "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells." | | | |
| RL | Cold Spring Harb. Symp. Quant. Biol. 51:657-668 (1986). | | | |
| RN | [3] | | | |
| RP | SEQUENCE OF 10-155. | | | |
| RX | MEDLINE=86016731; PubMed=3863109; | | | |
| RA | Esch F., Baird A., Ling N., Ueno N., Hill F., Denoroy L., Klepper R., | | | |
| RA | Gospodarowicz D., Boehlen P., Guillemin R.; | | | |
| RT | "Primary structure of bovine pituitary basic fibroblast growth factor (FGF) and comparison with the amino-terminal sequence of bovine brain acidic FGF." | | | |
| RL | Proc. Natl. Acad. Sci. U.S.A. 82:6507-6511 (1985). | | | |
| RN | [4] | | | |
| RP | SEQUENCE OF 1-9. | | | |
| RX | MEDLINE=86295737; PubMed=3741423; | | | |
| RA | Ueno N., Baird A., Esch F., Ling N., Guillemin R.; | | | |
| RT | "Isolation of an amino terminal extended form of basic fibroblast growth factor." | | | |
| RL | Biochem. Biophys. Res. Commun. 138:580-588 (1986). | | | |
| RN | [5] | | | |
| RP | SEQUENCE OF 25-41. | | | |
| RC | TISSUE=Kidney; | | | |
| RX | MEDLINE=86053546; PubMed=4081126; | | | |
| RA | Baird A., Esch F., Boehlen P., Ling N., Gospodarowicz D.; | | | |
| RT | "Isolation and partial characterization of an endothelial cell growth factor from the bovine kidney: homology with basic fibroblast growth factor." | | | |
| RL | Regul. Pept. 12:201-213 (1985). | | | |

[6]
 RN SEQUENCE OF 21-40.
 RP TISSUE=Kidney; PubMed=3809608;
 RC MEDLINE=87119165; PubMed=3809608;
 RA Ueno N., Baird A., Esch F., Shimazaki S., Ling N., Guillemin R.,
 RT "Purification and partial characterization of a mitogenic factor from
 RT bovine liver: structural homology with basic fibroblast growth
 RT factor";
 RL Regul. Pept. 16:135-145(1986).
 RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
 RA MEDLINE=91095983; PubMed=1702556;
 RX Zhu X., Komiya H., Chirino A., Faham S., Fox G.M., Arakawa T.,
 RA Hsu B.T., Reese D.C.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth
 RT factors";
 RL Science 251:90-93(1991).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
 CC AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
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 CC or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; M13440; AAA30518.1; -
 CC DR PIR; A24663; GKB08.
 CC DR PIR; A24819; A24819.
 CC DR PIR; A32878; A32878.
 CC DR PDB; 1BAS; 31-OCT-93.
 CC InterPro; IPR002209; HB/F_growthfact.
 CC DR InterPro; IPR002348; IL1_HBGF.
 CC DR Pfam; PF00167; FGF_1.
 CC DR PRINTS; PR00262; IL1HBGF.
 CC DR PRODOM; PD000831; HB/F_growthfact; 1.
 CC DR SMART; SM00442; FGF_1.
 CC DR PROSITE; PS00247; HBGF_FGF; 1.
 CC DR Growth factor; Mitogen; Angiogenesis; Heparin-binding;
 CC 3D-structure.
 CC KW 3D-structure.
 FT PROPEP 1 9
 FT CHAIN 10 155 HEPARIN-BINDING GROWTH FACTOR 2.
 FT CHAIN 25 155 KIDNEY-DERIVED GROWTH FACTOR.
 FT SITE 46 48 CELL ATTACHMENT SITE (POTENTIAL).
 FT SITE 88 90 CELL ATTACHMENT SITE (POTENTIAL).
 FT BINDING 27 31 HEPARIN (POTENTIAL).
 FT BINDING 116 119 HEPARIN (POTENTIAL).
 FT STRAND 30 34
 FT TURN 35 38
 FT STRAND 39 43
 FT TURN 45 46
 FT STRAND 49 52
 FT TURN 55 56
 FT TURN 58 60
 FT HELIX 62 68
 FT STRAND 69 70
 FT TURN 71 76
 FT STRAND 77 80
 FT TURN 81 85
 FT STRAND 87 88
 FT TURN 91 94
 FT STRAND 99 101
 FT HELIX 103 107
 FT STRAND 109 110
 FT TURN 113 117

FT TURN 121 122
 FT STRAND 124 124
 FT STRAND 127 127
 FT TURN 129 130
 FT STRAND 133 133
 FT HELIX 136 138
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 FT HELIX 144 146
 FT STRAND 148 151
 SQ SEQUENCE 155 AA; 17250 MW; BE6CE70FA6107129 CRC64;
 Query Match 100.0%; Score 828; DB 1; Length 155;
 Best Local Similarity 100.0%; Pred. No. 4.5e-79;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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 DB 1 MAAGSITTLPALPEDGSGAPPFGHFKDPKLYCKNGGFFLRHPDGVYREKSDPHI 60
 QY 61 KQLQAEERGVVISIGVCANRYLAKMEDGRLIASCVTDECFPFRLSSNNNTYRSRY 120
 DB 61 KQLQAEERGVVISIGVCANRYLAKMEDGRLIASCVTDECFPFRLSSNNNTYRSRY 120
 QY 121 SSMVVALKRTGQYKLGPKTPGQKALFLPMSAKS 155
 DB 121 SSMVVALKRTGQYKLGPKTPGQKALFLPMSAKS 155
 RESULT 2
 FGF2_SHEEP
 ID_FGF2_SHEEP STANDARD; PRT; 155 AA.
 AC P20003;
 DT 01-FEB-1991 (Rel. 17, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (basic fibroblast
 DE growth factor) (BFGF) (prolactropin).
 GN FGF2 OR FGF-2.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 OX NCBI_Taxid=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Sutton R., Ward W.G., Raphael K.A., Cam G.R.;
 RL Submitted (SEP-1994) to the EMBL/Genbank/DBJ databases.
 RP [2]
 RP SEQUENCE OF 9-155.
 RX MEDLINE=88055577; PubMed=3678486;
 RA Simpson R.J., Moritz R.U., Lloyd C.J., Fabri L.J., Nice E.C.,
 RA Rubira M.R., Burgess A.W.;
 RT "Primary structure of ovine pituitary basic fibroblast growth
 RT factor";
 RL FEBS Lett. 224:128-132(1987).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
 CC AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC or send an email to license@isb-sib.ch).
 CC -----
 CC EMBL; L36136; AAA31519.1; -

DR PIR; S00185; S00185.
 DR HSSP; P09038; 1BFF.
 DR InterPro; IPRO02209; HB/F growthfact.
 DR InterPro; IPRO02348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 KW PROPEP 1 9
 FT CHAIN 10 155
 FT SITE 45 48
 FT SITE 87 90
 FT BINDING 27 31
 FT BINDING 116 119
 SQ SEQUENCE 155 AA; 17280 MW; B5F2364BA610606D CRC64;
 Query Match 99.3%; Score 822; DB 1; Length 155;
 Best Local Similarity 99.4%; Pred. No. 1,9e-78;
 Matches 154; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPLPDPDGGSGAPFPGHFKDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHI 60
 DB 1 MAAGSITTLPLPDPDGGSGAPFPGHFKDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHI 60
 QY 61 KLGQAEERGVVSTKGYCANRYLAKMEKGRILASKCTVDECFPERLESNNYNTYRSKY 120
 DB 61 KLGQAEERGVVSTKGYCANRYLAKMEKGRILASKCTVDECFPERLESNNYNTYRSKY 120
 QY 121 SSWYVALKRTGYKLGPGTGPQKALFLPMASKS 155
 DB 121 SSWYVALKRTGYKLGPGTGPQKALFLPMASKS 155
 RESULT 3
 FGPF2_HUMAN STANDARD; PRT; 155 AA.
 AC P09038;
 DT 01-NOV-1988 (Rel. 09, Created)
 DT 01-NOV-1988 (Rel. 09, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (basic fibroblast growth factor) (BFGF) (Prostatein).
 GN FGPF2 OR FGFB.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=87053817; PubMed=3780670;
 RA Abraham J.A.; Wang J.L.; Tumblo A.; Mergia A.; Friedman J.;
 RA Gospodarowicz D.; Fiddes J.C.;
 RT "Human basic fibroblast growth factor: nucleotide sequence and genomic organization."
 RL EMBO J. 5:2523-2528(1986).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=87217066; PubMed=3472745;
 RA Abraham J.A.; Wang J.L.; Tumblo A.; Mergia A.; Fiddes J.C.;
 RT "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells."
 RL Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).
 RN [3]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=87213238; PubMed=3579930;
 RA Sommer A.; Brewer M.T.; Thompson R.C.; Moscattelli D.; Presta M.;
 RA Rifkin D.B.;
 RT "A form of human basic fibroblast growth factor with an extended amino terminus."
 RL Biochem. Biophys. Res. Commun. 144:543-550(1987).
 RN [4]

RP SEQUENCE FROM N.A.
 RX MEDLINE=87162468; PubMed=2435575;
 RA Kurokawa T.; Sasada R.; Iwane M.; Igarashi K.;
 RT "Cloning and expression of cDNA encoding human basic fibroblast growth factor."
 RL FEBS Lett. 213:189-194(1987).
 RN [5]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89184522; PubMed=2538817;
 RA Prats H.; Kaghad M.; Prats A.C.; Klagsbrun M.; Lelias J.M.;
 RA Liauzun P.; Chalou P.; Tauber J.P.; Amalric F.; Smith J.A.;
 RA Caput D.;
 RT "High molecular mass forms of basic fibroblast growth factor are initiated by alternative CUG codons."
 RL Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989).
 RN [6]
 RP SEQUENCE OF 10-35.
 RX MEDLINE=86275260; PubMed=3732516;
 RA Gautschi P.; Prater-Schroeder M.; Boehlen P.;
 RT "Partial molecular characterization of endothelial cell mitogens from human brain: acidic and basic fibroblast growth factors."
 RL FEBS Lett. 204:203-207(1986).
 RN [7]
 RP SEQUENCE OF 10-39.
 RX MEDLINE=86186784; PubMed=3964259;
 RA Gimenez-Galligo G.; Conn G.; Hatcher V.B.; Thomas K.A.;
 RT "Human brain-derived acidic and basic fibroblast growth factors: amino terminal sequences of a large form of basic fibroblast growth factor isolated from human benign prostatic hyperplastic tissue."
 RL Biochem. Biophys. Res. Commun. 135:541-548(1986).
 RN [8]
 RP SEQUENCE OF 2-22.
 RX MEDLINE=87156566; PubMed=2435284;
 RA Story M.T.; Bach F.; Shimazaki S.; Saese J.; Jacobs S.C.; Lawson R.K.;
 RT "Amino-terminal sequence of a large form of basic fibroblast growth factor isolated from human benign prostatic hyperplastic tissue."
 RL Biochem. Biophys. Res. Commun. 142:702-709(1987).
 RN [9]
 RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
 RX MEDLINE=91195367; PubMed=1707542;
 RA Eriksson A.E.; Couzens L.S.; Weaver L.H.; Matthews B.W.;
 RT "Three-dimensional structure of human basic fibroblast growth factor."
 RL Proc. Natl. Acad. Sci. U.S.A. 88:3441-3445(1991).
 RN [10]
 RP X-RAY CRYSTALLOGRAPHY (1.6 ANGSTROMS).
 RX MEDLINE=94004464; PubMed=7691311;
 RA Eriksson A.E.; Couzens L.S.; Matthews B.W.;
 RT "Refinement of the structure of human basic fibroblast growth factor at 1.6-A resolution and analysis of presumed heparin binding sites by selenate substitution."
 RL Protein Sci. 2:1274-1284(1993).
 RN [11]
 RP X-RAY CRYSTALLOGRAPHY (1.8 ANGSTROMS).
 RX MEDLINE=91195368; PubMed=1849658;
 RA Zhang J.; Couzens L.S.; Barr P.J.; Sprang S.R.;
 RT "Three-dimensional structure of human basic fibroblast growth factor, a structural homolog of Interleukin 1 beta."
 RL Proc. Natl. Acad. Sci. U.S.A. 88:3446-3451(1991).
 RN [12]
 RP X-RAY CRYSTALLOGRAPHY (1.6 ANGSTROMS).
 RX MEDLINE=92121151; PubMed=1769963;
 RA Ago H.; Kitagawa Y.; Fujishima A.; Matsuura Y.; Katsube Y.;
 RT "Crystal structure of basic fibroblast growth factor at 1.6-A resolution."
 RL J. Biochem. 110:360-363(1991).
 RN [13]
 RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
 RX MEDLINE=91095983; PubMed=1702556;
 RA Zhu X.; Komiyama H.; Chirino A.; Faham S.; Fox G.M.; Arakawa T.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth factors."
 RL Science 251:90-93(1991).

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RN (14)
RP STRUCTURE BY NMR.
RX MEDLINE=97040521; PubMed=8885834;
RA Moy F.J., Seddon A.P., Boehlen P., Powers R.;
RT "High-resolution solution structure of basic fibroblast growth factor
RT determined by multidimensional heteronuclear magnetic resonance
RT spectroscopy";
RL Biochemistry 35:13552-13561(1996).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC -----
DR EMBL, M17599; AAA52534.1; ALT_INIT.
DR EMBL, X04431; CAA28027.1; -
DR EMBL, X04432; CAA28028.1; -
DR EMBL, X04433; CAA28029.1; -
DR EMBL, M27968; AAA52448.1; -
DR EMBL, J04513; AAA52533.1; ALT_INIT.
DR PIR, A25824; A25824.
DR PIR, A26642; A26642.
DR PIR, B24243; B24243.
DR PIR, B24301; B24301.
DR PIR, B32878; B32878.
DR PIR, S00297; S00297.
DR PDB, 2RGF; 15-APR-92.
DR PDB, 4FGF; 15-JUL-93.
DR PDB, 1FGA; 15-JUL-93.
DR PDB, 1BFC; 03-APR-96.
DR PDB, 1BFB; 03-APR-96.
DR PDB, 1BFF; 16-JUN-97.
DR PDB, 1BRG; 31-JAN-94.
DR PDB, 2BFH; 30-APR-94.
DR PDB, 1BLA; 08-NOV-96.
DR PDB, 1BLD; 08-NOV-96.
DR Genew; HGNC:3676; FGF2.
DR MIM, 134920; -
DR InterPro; IPR002209; HB/F growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF, 1.
DR PRINTS; PR00262; IL1HBGF.
DR Prodom; PD000831; HB/F growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding;
KW 3D-structure.
FT PROPEP 1 9
FT CHAIN 10 155 HEPARIN-BINDING GROWTH FACTOR 2.
FT SITE 46 48 CELL ATTACHMENT SITE (POTENTIAL).
FT SITE 88 90 CELL ATTACHMENT SITE (POTENTIAL).
FT BINDING 27 31 HEPARIN (POTENTIAL).
FT BINDING 116 119 HEPARIN (POTENTIAL).
FT STRAND 30 34
FT STRAND 35 38
FT STRAND 39 43
FT STRAND 45 46
FT STRAND 49 52
FT TURN 55 56
FT HELIX 58 60
FT STRAND 62 66
FT TURN 69 70

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FT STRAND 71 76
FT TURN 77 80
FT STRAND 81 85
FT TURN 87 88
FT STRAND 91 94
FT HELIX 99 101
FT STRAND 103 107
FT TURN 109 110
FT STRAND 111 117
FT TURN 121 122
FT STRAND 124 124
FT STRAND 127 127
FT TURN 129 130
FT STRAND 132 133
FT HELIX 136 138
FT TURN 141 142
FT HELIX 144 146
FT STRAND 148 152

Query Match
Best Local Similarity 98.7%; Score 817; DB 1; Length 155;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGGGAPPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGGGAPPPGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
QY 61 KIQLOAEERGVVSIKVCANRYLAKEDGRLLAKSCVTDCEFFPERLBSNNYTRSRKY 120
DB 61 KIQLOAEERGVVSIKVCANRYLAKEDGRLLAKSCVTDCEFFPERLBSNNYTRSRKY 120
QY 121 SSMVVALKRTGQYKYGPKPGQKAILFLPMGAKS 155
DB 121 SSMVVALKRTGQYKYGPKPGQKAILFLPMGAKS 155

RESULT 4
FGF2_RAT STANDARD; PRT; 154 AA.
ID FGF2_RAT
AC P13109;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (basic fibroblast
DE growth factor) (BFGF) (Proteoglycan).
GN FGF2 OR FGF-2.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxId=10116;
RN (1)
RP SEQUENCE FROM N.A.
RC STRAIN=Sprague-Dawley; TISSUE=Ovary;
RX MEDLINE=89061721; PubMed=3196337;
RA Shimasaki S., Emoto N., Koba A., Mercado M., Shibata F.,
RA Cooksey K., Baird A., Ling N.;
RT "Complementary DNA cloning and sequencing of rat ovarian basic
RT fibroblast growth factor and tissue distribution study of its mRNA";
RL Biochem. Biophys. Res. Commun. 157:256-263(1988).
RN (2)
RP SEQUENCE FROM N.A.
RC TISSUE=Brain;
RX MEDLINE=88262516; PubMed=3387229;
RA Kurokawa T., Seno M., Igarashi K.;
RT "Nucleotide sequence of rat basic fibroblast growth factor cDNA.";
RL Nucleic Acids Res. 16:5201-5201(1988).
RN (3)
RP SEQUENCE OF 1-28 FROM N.A.
RC STRAIN=Sprague-Dawley; TISSUE=Testis;
RX MEDLINE=97200905; PubMed=9048734;
RA Pasumathil K.B.S., Yin Y., Catlin P.A.;
RT "Cloning of the rat fibroblast growth factor-2 promoter region and
RT its response to mitogenic stimuli in glioma C6 cells.";

```

RL J. Neurochem. 68:898-908(1997).

RN (4) SEQUENCE OF 35-154 FROM N.A.

RP STRAIN=Sprague-Dawley; TISSUE=Brain;

RC MEDLINE=92329546; PubMed=1378302;

RX El-Husseini A.E.-D., Paterson J.A., Myal Y., Shiu R.P.C.;

RA "PCR detection of the rat brain basic fibroblast growth factor (bFGF)

RT mRNA containing a unique 3' untranslated region."

RL Biochim. Biophys. Acta 1131:314-316(1992).

CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS

CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN

CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND

CC CONCENTRATION OF THESE 2 GROWTH FACTORS.

CC -1- SUBUNIT: MONOMER.

CC -1- TISSUE SPECIFICITY: FOUND IN ALL THE TISSUES EXAMINED.

CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES

CC AFGF.

CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.

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CC -----

CC EMBL: M22427; AAA41210.1; -

DR EMBL: X07285; CAA30265.1; -

DR EMBL: U78079; AAC53225.1; -

DR EMBL: X61697; CAA43863.1; -

DR PIR: S00876; S00876.

DR PIR: A31674; A31674.

DR HSSP: P09038; 1BFF.

DR InterPro: IPR002209; HB/F.growthfact.

DR InterPro: IPR002348; IL1_HBGF.

DR Pfam: PF00167; FGF.1.

DR PRINTS: PR00262; IL1HBGF.

DR ProDom: PD000831; HB/F.growthfact; 1.

DR SMART: SM00442; FGF.1.

DR PROSITE: PS00247; HBGF.FGF.1.

DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.

KM PROPEP 1 9

FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.

FT BINDING 26 30 HEPARIN (POTENTIAL).

FT BINDING 115 118 HEPARIN (POTENTIAL).

SO SEQUENCE 154 AA; 17139 MW; 1A0F14FF423D8403 CRC64;

Query Match 96.24; Score 796.5; DB 1; Length 154;

Best Local Similarity 96.84; Pred. No. 8.3e-76;

Matches 150; Conservative 3; Mismatches 1; Indels 1; Gaps 1;

QY 1 MAAGSITTLPLPEDGSGAPPGHFKDPKRLKLCNKGFFLRHPDGRVGVREKSDPHI 60

DB 1 MAAGSITSLPLPEDGG-CAFPFGHFKDPKRLKLCNKGFFLRHPDGRVGVREKSDPHV 59

QY 61 KLOLAEEERGVSIGVCANRYLAMKEDGRLLASKCVTDECFERLESNNYNTYRSKY 120

DB 60 KLOLAEEERGVSIGVCANRYLAMKEDGRLLASKCVTECEFFERLESNNYNTYRSKY 119

QY 121 SSWYALAKRTGQYKLGPTGPGQKAILFLPMSAKS 155

DB 120 SSWYALAKRTGQYKLGSGTGPQKAILFLPMSAKS 154

RESULT 5

FGF2 MOUSE STANDARD; PRT; 154 AA.

AC P15655;

DT 01-APR-1990 (Rel. 14, Created)

DT 01-APR-1990 (Rel. 14, Last sequence update)

DT 15-JUN-2002 (Rel. 41, Last annotation update)

DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast

DE growth factor) (bFGF) (Prostatropin).

GN FGF2 OR FGF-2.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

ON NCB1_TaxID=10090;

OX (1)

RP SEQUENCE FROM N.A.

RX MEDLINE=90201563; PubMed=2318343;

RA Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.;

RT "Isolation of cDNAs encoding four mouse FGF family members and

RT characterization of their expression patterns during embryogenesis."

RL Dev. Biol. 138:454-463(1990).

RN [2]

RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J, A/J, and NOD/LtJ; TISSUE=Spleen;

RA Ma R.Z., Teuscher C.;

RL Submitted (May-1998) to the EMBL/GenBank/DBJ databases.

CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS

CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN

CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND

CC CONCENTRATION OF THESE 2 GROWTH FACTORS.

CC -1- SUBUNIT: MONOMER.

CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES

CC AFGF.

CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.

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CC -----

CC EMBL: M30644; AAA37621.1; -

DR EMBL: AF065903; AAC17503.1; -

DR EMBL: AF065904; AAC17504.1; -

DR EMBL: AF065905; AAC17505.1; -

DR PIR: C37360; C37360.

DR HSSP: P09038; 1BFF.

DR MGD: MGI:95516; FGF2.

DR InterPro: IPR002209; HB/F.growthfact.

DR InterPro: IPR002348; IL1_HBGF.

DR Pfam: PF00167; FGF.1.

DR PRINTS: PR00262; IL1HBGF.

DR ProDom: PD000831; HB/F.growthfact; 1.

DR SMART: SM00442; FGF.1.

DR PROSITE: PS00247; HBGF.FGF.1.

DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.

KM PROPEP 1 9

FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.

FT BINDING 26 30 HEPARIN (POTENTIAL).

FT BINDING 115 118 HEPARIN (POTENTIAL).

SO SEQUENCE 154 AA; 17153 MW; 689F677416274388 CRC64;

Query Match 94.44; Score 781.5; DB 1; Length 154;

Best Local Similarity 94.84; Pred. No. 3e-74;

Matches 147; Conservative 4; Mismatches 3; Indels 1; Gaps 1;

QY 1 MAAGSITTLPLPEDGSGAPPGHFKDPKRLKLCNKGFFLRHPDGRVGVREKSDPHI 60

DB 1 MAAGSITSLPLPEDGG-APPGHFKDPKRLKLCNKGFFLRHPDGRVGVREKSDPHV 59

QY 61 KLOLAEEERGVSIGVCANRYLAMKEDGRLLASKCVTDECFERLESNNYNTYRSKY 120

DB 60 KLOLAEEERGVSIGVCANRYLAMKEDGRLLASKCVTECEFFERLESNNYNTYRSKY 119

QY 121 SSWYALAKRTGQYKLGPTGPGQKAILFLPMSAKS 155

DB 120 SSWYALAKRTGQYKLGSGTGPQKAILFLPMSAKS 154

RESULT 6

FGF2_CHICK STANDARD; PRT; 158 AA.

ID_FGF2_CHICK

AC P48800; 01-FEB-1996 (Rel. 33, Created)

DT 01-FEB-1996 (Rel. 33, Last sequence update)

DT 15-JUN-2002 (Rel. 41, Last annotation update)

DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast

growth factor) (BFGF).

GN FGF2 OR FGF-2.

OS Gallus gallus (Chicken).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;

OC Gallus.

OX NCBI_TaxID=9031;

RN [1]

RP SEQUENCE FROM N.A.

RA MEDLINE=93246053; PubMed=7683281;

RT "Expression of alternatively spliced bFGF first coding exons and

antisense mRNAs during chicken embryogenesis.";

RL Dev. Biol. 157:110-118(1993).

CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS

CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN

CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND

CC CONCENTRATION OF THESE 2 GROWTH FACTORS.

CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES

CC AFGF.

CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.

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CC -----

CC EMBL; M95707; AAA48617.1; -

DR HSSP; P09038; 1BFF.

DR InterPro; IPR002209; HB/F growthfact.

DR InterPro; IPR002348; IL1_HBGF.

DR Pfam; PF00167; FGF; 1.

DR PRINTS; PR00262; IL1HBGF.

DR ProDom; PD000831; HB/F growthfact; 1.

DR SMART; SM00442; FGF; 1.

DR PROSITE; PS00247; HBGF_FGF; 1.

KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.

FT PROPEP 1 12

FT CHAIN 13 156

FT BINDING 30 34

FT BINDING 119 122

SEQUENCE 158 AA; 17374 MW; 7869B684C17F1816 CRC64;

Query Match 93.0%; Score 770; DB 1; Length 158;

Best Local Similarity 93.5%; Pred. No. 4.9e-73;

Matches 144; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 2 AAGSITTLPALPEDGSGAPPGHFKDPKRLYCKNGGFFLRINHDGVDGVRKSDPHK 61

DB 5 AAGSITTLPALPDGCGGAGFPFGHFKDPKRLYCKNGGFFLRINHDGVDGVRKSDPHK 64

QY 62 LQLOAERGVVSIKGVANRYLANKEDGRLLASCVTDECFPERLSNNNTYRSRKY 121

DB 65 LQLOAERGVVSIKGVANRYLANKEDGRLLASCVTDECFPERLSNNNTYRSRKY 124

QY 122 SWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155

DB 125 DMVALKRTGQYKLGPKTGPQKAILFLPMSAKS 158

RESULT 7

FGF2_MONDO

ID_FGF2_MONDO STANDARD; PRT; 156 AA.

AC P48798; 01-FEB-1996 (Rel. 33, Created)

DT 01-FEB-1996 (Rel. 33, Last sequence update)

DT 15-JUN-2002 (Rel. 41, Last annotation update)

DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast

growth factor) (BFGF) (Procatropin).

GN FGF2.

OS Monodelphis domestica (Short-tailed grey opossum).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Metatheria; Didelphimorphia; Didelphidae; Monodelphis.

OX NCBI_TaxID=11616;

RN [1]

RP SEQUENCE FROM N.A.

RA MEDLINE=94296558; PubMed=8024698;

RT Kuewitt D.F., Sabourin C.L.K., Sherburn T.E., Ley R.D.;

RT "Characterization of cDNA encoding basic fibroblast growth factor of

the marsupial Monodelphis domestica.";

RL DNA Cell Biol. 13:549-554(1994).

CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS

CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN

CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND

CC CONCENTRATION OF THESE 2 GROWTH FACTORS.

CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES

CC AFGF.

CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.

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CC -----

CC EMBL; Z15154; CAA78854.1; ALT_INIT.

DR HSSP; P09038; 1BFF.

DR InterPro; IPR002209; HB/F growthfact.

DR InterPro; IPR002348; IL1_HBGF.

DR Pfam; PF00167; FGF; 1.

DR PRINTS; PR00262; IL1HBGF.

DR ProDom; PD000831; HB/F growthfact; 1.

DR SMART; SM00442; FGF; 1.

DR PROSITE; PS00247; HBGF_FGF; 1.

KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.

FT PROPEP 1 9

FT CHAIN 10 156

FT BINDING 28 32

FT BINDING 117 120

SEQUENCE 156 AA; 17303 MW; 78655F0C49BF1209 CRC64;

Query Match 91.6%; Score 758.5; DB 1; Length 156;

Best Local Similarity 92.9%; Pred. No. 7.6e-72;

Matches 145; Conservative 4; Mismatches 6; Indels 1; Gaps 1;

QY 1 MAAGSITTLPALPED-GGAGAPPGHFKDPKRLYCKNGGFFLRINHDGVDGVRKSDPH 59

DB 1 MAAGSITTLPALSGDGGGAGFPFGHFKDPKRLYCKNGGFFLRINHDGVDGVRKSDPH 60

QY 60 IKLQLOAERGVVSIKGVANRYLANKEDGRLLASCVTDECFPERLSNNNTYRSRKY 119

DB 61 IKLQLOAERGVVSIKGVANRYLANKEDGRLLASCVTDECFPERLSNNNTYRSRKY 120

QY 120 YSGWYVALKRTGQYKLGPKTGPQKAILFLPMSAKS 155

DB 121 YSNWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 156

RESULT 8

FGF2_RABBIT

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ID  FGF2_RABIT      STANDARD;      PRT;      137 AA.
AC  P48759;
DT  01-FEB-1996 (Rel. 33, Created)
DT  01-FEB-1996 (Rel. 33, Last sequence update)
DT  15-JUN-2002 (Rel. 41, Last annotation update)
DE  Heparin-binding growth factor 2 (HBGF-2) (Basic fibroblast growth
DE  factor) (BFGF) (Procatropin) (Fragment).
GN  FGF2.
OS  Oryctolagus cuniculus (Rabbit).
OC  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC  Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX  NCBI_TaxID=9986;
RN  [1]
RP  SEQUENCE FROM N.A.
RC  STRAIN=New Zealand white; TISSUE=Smooth muscle;
RX  MEDLINE=93343209; Pubmed=8342599;
RA  Winkles J.A., Friesel R., Alberts G.F., Janat M.F., Liao G.;
RT  "Elevated expression of basic fibroblast growth factor in an
RT  immortalized rabbit smooth muscle cell line."
RL  Am. J. Pathol. 143:518-527(1993).
CC  -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC  IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC  VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC  CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC  -1- SUBUNIT: MONOMER.
CC  -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC  AFGF.
CC  -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC  -----
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CC  entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC  or send an email to license@isb-sib.ch).
CC  -----
DR  EMBL; L12034; AAA31248.1; -.
DR  HSSP; P09038; 1BFF.
DR  InterPro; IPR002209; HB/F_growthfact.
DR  Pfam; PF00167; FGF; 1.
DR  ProDom; PD000831; HB/F_growthfact; 1.
DR  SMART; SM00442; FGF; 1.
DR  PROSITE; PS00247; HBGF_FGF; 1.
KM  Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT  BINDING 18 22 HEPARIN (POTENTIAL).
FT  BINDING 107 110 HEPARIN (POTENTIAL).
FT  NON_TER 137 137
SQ  SEQUENCE 137 AA; 15418 MW; 0D9E8457B88B8C51 CRC64;

Query Match 88.9%; Score 736; DB 1; Length 137;
Best Local Similarity 99.3%; Pred. No. 1,4e-69;
Matches 136; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 10 PALPEDGGSGAPPFGHFKDPKRLKYNKGFFLRIHPDGVNDGVREKSDPHIKLQQAEEER 69
DB 1 PALPEDGGSGAPPFGHFKDPKRLKYNKGFFLRIHPDGVNDGVREKSDPHIKLQQAEEER 60
QY 70 GVSISKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSKYSWYALKR 129
DB 61 GVSISKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSKYSWYALKR 120
QY 130 TGOYKLGPTGPGOKAI 146
DB 121 TGOYKLGPTGPGOKAI 137

RESULT 9
FGF2_XENLA STANDARD; PRT; 155 AA.
AC P12226;
DT 01-OCT-1989 (Rel. 12, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)

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DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
DE growth factor) (BFGF).
GN FGF2 OR FGF-2.
OS Xenopus laevis (African clawed frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipidea; Pipidae;
OC Xenopodinae; Xenopus.
OX NCBI_TaxID=8355;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89058621; Pubmed=3194757;
RA Kimmelman D., Abraham J., Haaparanta T., Palisi T., Kirschner M.;
RT "The presence of fibroblast growth factor in the frog egg: its role
RT as a natural mesoderm inducer."
RL Science 242:1053-1056(1988).
RN [2]
RP SEQUENCE OF 95-155 FROM N.A.
RX MEDLINE=88052890; Pubmed=3479265;
RA Kimmelman D., Kirschner M.;
RT "Synergistic induction of mesoderm by FGF and TGF-beta and the
RT identification of an mRNA coding for FGF in the early Xenopus
RT embryo."
RL Cell 51:869-877(1987).
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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DR EMBL; M18067; AAA49726.1; -.
DR PIR; A29618; A29618.
DR PIR; A40117; A40117.
DR HSSP; P09038; 1BFF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KM Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 9
FT CHAIN 10 155 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 27 31 HEPARIN (POTENTIAL).
FT BINDING 116 119 HEPARIN (POTENTIAL).
FT CONFLICT 111 111 MISSING (IN REF. 2).
SQ SEQUENCE 155 AA; 17241 MW; 036735C80631428D CRC64;

Query Match 82.7%; Score 685; DB 1; Length 155;
Best Local Similarity 83.9%; Pred. No. 3.3e-64;
Matches 130; Conservative 8; Mismatches 17; Indels 0; Gaps 0;

QY 1 MAAGSITLPLPEDGGSGAPPFGHFKDPKRLKYNKGFFLRIHPDGVNDGVREKSDPHI 60
DB 1 MAAGSITLPLPESEDEGNTFPSPGSKDPKRLKYNKGFFLRIHPDGVNDGVREKSDPHI 60
QY 61 KIQQAEEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KIQQAEEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 SSWYVALKRTGQYKLGPTGPGOKAI 155
DB 121 SSWYVALKRTGQYKLGPTGPGOKAI 155

RESULT 10
FGF1_MESAU STANDARD; PRT; 155 AA.
ID FGF1_MESAU

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AC P34004;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast
GN FGF1 OR FGF-1.
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN (1)
RP SEQUENCE FROM N.A.
RX MEDLINE=90270291; PubMed=1693366;
RA Hall J.A., Harris M.A., Malerk M., Mansson P.E., Zhou H., Harris S.E.;
RT "Characterization of the hamster DDT-1 cell afGF/HBGF-1 gene and cDNA
RL J. Cell. Biochem. 43:17-26(1990).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
CC THAN DOES BFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
DR PIR; A60721; A60721.
DR HSSP; P05230; IRML.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; ILHBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KM Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 15 BY SIMILARITY.
FT CHAIN 16 155 HEPARIN-BINDING GROWTH FACTOR 1.
FT BINDING 24 28 HEPARIN (POTENTIAL).
FT BINDING 113 116 HEPARIN (POTENTIAL).
SQ SEQUENCE 155 AA; 17403 MW; 41B5EC760E412CC5 CRC64;

Query Match 51.6%; Score 427.5; DB 1; Length 155;
Best Local Similarity 55.4%; Pred. No. 2e-37;
Matches 87; Conservative 17; Mismatches 48; Indels 5; Gaps 2;

QY 1 MAAGSTTTLPALPEDGSGAFPPGHFDPKRLTKCKNGGFLLRIHPDGRVDGVRKSDPHI 60
DB 1 MAGEGTTTSALTFRN---LPPGNKKKRLTKCSNGHFLRLPDTGTVDGTRSDQHI 57
QY 61 KIQLOAERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNVTYSRKY 120
DB 58 QIQLSAESAGEVYIKGTETSGOYLAMDITGLYGSQTPNECLFLERLENNHTYTSKCH 117
QY 121 S--SWYVALKRTGYKLGPTGPGOKAILFLPM 155
DB 118 AERNWVGLKKNKSGCRGPRTHYGQKAILFLPLVSS 154

RESULT 11
ID FGF1_CHICK STANDARD; PRT; 155 AA.
AC P19596;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast
GN FGF1 OR FGF-1.
OS Gallus gallus (Chicken).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;

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OC Gallus.
OX NCBI_TaxID=9031;
RN (1)
RP SEQUENCE FROM N.A.
RX MEDLINE=91347925; PubMed=1715259;
RA Schurch H., Rissu W.;
RT "Differentiating and mature neurons express the acidic fibroblast
RL growth factor gene during chick neural development."
RN Development 111:1143-1154(1991).
RP SEQUENCE FROM N.A.
RA Martin G.R., Han J.K.;
RL Submitted (JUL-1995) to the EMBL/Genbank/DBJ databases.
RN (3)
RP SEQUENCE OF 22-48.
RX MEDLINE=88296438; PubMed=3402441;
RA Rissu W., Gautschi-Sova P., Boehlen P.;
RT "Endothelial cell growth factors in embryonic and adult chick brain
RL are related to human acidic fibroblast growth factor."
RN EMBO J. 7:959-962(1988).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
CC THAN DOES BFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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DR EMBL; S63263; AAB19629.1; -
DR EMBL; U31663; AAB80310.1; -
DR EMBL; S63261; AAD13942.1; -
DR PIR; S02639; S02639.
DR HSSP; P05230; 2AXM.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; ILHBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KM Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 15
FT CHAIN 16 155 HEPARIN-BINDING GROWTH FACTOR 1.
FT BINDING 22 155 ENDOTHELIAL CELL GROWTH FACTOR ALPHA.
FT BINDING 24 28 HEPARIN (POTENTIAL).
FT BINDING 113 116 HEPARIN (POTENTIAL).
SQ SEQUENCE 155 AA; 17322 MW; 8EDB70545E2B365 CRC64;

Query Match 50.7%; Score 419.5; DB 1; Length 155;
Best Local Similarity 55.6%; Pred. No. 1.3e-36;
Matches 85; Conservative 21; Mismatches 42; Indels 5; Gaps 2;

QY 1 MAAGSTTTLPALPEDGSGAFPPGHFDPKRLTKCKNGGFLLRIHPDGRVDGVRKSDPHI 60
DB 1 MAGEGTTTSALTFRG---LPPGNKKKRLTKCSNGHFLRLPDKVGDGRSDQHI 57
QY 61 KIQLOAERGVSISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNVTYSRKY 120
DB 58 QIQLSAEDVGEVYIKSTAGGYIAMDITGLYGSQTPNECLFLERLENNHTYTSKCH 117
QY 121 S--SWYVALKRTGYKLGPTGPGOKAILFLPM 151
DB 118 AERNWVGLKKNKSGKLGPRTHYGQKAILFLPL 150

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RESULT 12
 FCPI HUMAN STANDARD; PRT; 155 AA.
 ID P05230; P07502;
 AC FGF1_HUMAN
 DT 13-AUG-1987 (Rel. 05, Created)
 DT 13-AUG-1987 (Rel. 05, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (acidic fibroblast growth factor) (AFGF) (beta-endothelial cell growth factor) (ECGF-beta).
 DE FGF1 OR FGFB.
 GN Homo sapiens (Human).
 OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 OC NCBI_TaxId=9606;
 OK [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=86261805; PubMed=3523756;
 RA Jaye M., Howk R., Burgess W., Ricca G.A., Chiu I.-M., Ravera M.W., O'Brien S.J., Modi W.S., Maciag T., Dronan W.N.;
 RT "Human endothelial cell growth factor: cloning, nucleotide sequence, and chromosome localization.";
 RL Science 233:541-545(1986).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX TISSUE=Brain stem;
 RC MEDLINE=89343957; PubMed=2474753;
 RA Wang W.P., Lehtoma K., Varban M.L., Krishnan I., Chiu I.M.;
 RT "Cloning of the gene coding for human class I heparin-binding growth factor and its expression in fetal tissues.";
 RL Mol. Cell. Biol. 9:2387-2395(1989).
 RN [3]
 RP SEQUENCE FROM N.A.
 RX TISSUE=Brain stem;
 RC MEDLINE=90265618; PubMed=1693186;
 RA Chiu I.M., Wang W.P., Lehtoma K.;
 RT "Alternative splicing generates two forms of mRNA coding for human heparin-binding growth factor I.";
 RL Oncogene 5:755-762(1990).
 RN [4]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=90073637; PubMed=2590193;
 RA Merz A., Tischer E., Graves D., Tumolo A., Miller J.,
 RA Gospodarowicz D., Abraham J.A., Shipley G.D., Fides J.C.;
 RT "Structural analysis of the gene for human acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 164:1121-1129(1989).
 RN [5]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92019819; PubMed=1717925;
 RA Wang W.P., Quirk D., Balcerzak S.P., Needleman S.W., Chiu I.M.;
 RT "Cloning and sequence analysis of the human acidic fibroblast growth factor gene and its preservation in leukemia patients.";
 RL Oncogene 6:1521-1529(1991).
 RN [6]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92202857; PubMed=1372643;
 RA Li Y.L., Kha H., Golden J.A., Mischelstein A.A.J., Goetzl E.J.,
 RA Turk E.J.;
 RT "An acidic fibroblast growth factor protein generated by alternate splicing acts like an antagonist.";
 RL J. Exp. Med. 175:1073-1080(1992).
 RN [7]
 RP SEQUENCE OF 1-154 FROM N.A.
 RX MEDLINE=94069734; PubMed=7504343; Frist W.H., Miller G.G.;
 RA Zhao X.M., Yeoh T.K., Hiebert M.;
 RT "The expression of acidic fibroblast growth factor (heparin-binding growth factor-1) and cytokine genes in human cardiac allografts and T cells.";
 RL Transplantation 56:1177-1182(1993).
 RN [8]
 RP SEQUENCE OF 1-40 FROM N.A.

RX MEDLINE=90365758; PubMed=2393407;
 RA Crumley G., Dionne C.A., Jaye M.;
 RT "The gene for human acidic fibroblast growth factor encodes two upstream exons alternatively applied to the first coding exon.";
 RL Biochem. Biophys. Res. Commun. 171:7-13(1990).
 RN [9]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86296647; PubMed=2427112;
 RA Harper J.W., Strzdom D.J., Lobb R.R.;
 RT "Human class I heparin-binding growth factor: structure and homology to bovine acidic brain fibroblast growth factor.";
 RL Biochemistry 25:4097-4103(1986).
 RN [10]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86295741; PubMed=3527167;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "The complete amino acid sequence of human brain-derived acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 138:611-617(1986).
 RN [11]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=87048871; PubMed=3778488;
 RA Gautschi-Sova P., Mueller T., Boehlen P.;
 RT "Amino acid sequence of human acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 140:874-880(1986).
 RN [12]
 RP SEQUENCE OF 16-47.
 RX MEDLINE=86186784; PubMed=3964259;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "Human brain-derived acidic and basic fibroblast growth factors: amino terminal sequences and specific mitogenic activities.";
 RL Biochem. Biophys. Res. Commun. 135:541-548(1986).
 RN [13]
 RP SEQUENCE OF 16-49.
 RX MEDLINE=86275260; PubMed=3732516;
 RA Gautschi P., Frater-Schroeder M., Boehlen P.;
 RT "Partial molecular characterization of endothelial cell mitogens from human brain: acidic and basic fibroblast growth factors.";
 RL FEBS Lett. 204:203-207(1986).
 RN [14]
 RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).
 RX MEDLINE=96194129; PubMed=8652550;
 RA Blaber M., Disalvo J., Thomas K.A.;
 RT "X-ray crystal structure of human acidic fibroblast growth factor.";
 RL Biochemistry 35:2086-2094(1996).
 RN [15]
 RP STRUCTURE BY NMR OF 24-155.
 RX MEDLINE=94358885; PubMed=7521397;
 RA Pineda-Lucena A., Jimenez M.A., Nieto J.L., Santoro J., Rico M.,
 RA Gimenez-Gallego G.;
 RT "H-NMR assignment and solution structure of human acidic fibroblast growth factor activated by inositol hexasulfate.";
 RL J. Mol. Biol. 242:81-98(1994).
 RN [16]
 RP STRUCTURE BY NMR OF 24-155.
 RX MEDLINE=97107535; PubMed=8950275;
 RA Pineda-Lucena A., Jimenez M.A., Lozano R.M., Nieto J.L., Santoro J.,
 RA Rico M., Gimenez-Gallego G.;
 RT "Three-dimensional structure of acidic fibroblast growth factor in solution: effects of binding to a heparin functional analog.";
 RL J. Mol. Biol. 264:162-178(1996).
 RN [17]
 RP STRUCTURE BY NMR OF 25-155.
 RX MEDLINE=98387896; PubMed=9719643;
 RA Lozano R.M., Jimenez M., Santoro J., Rico M., Gimenez-Gallego G.;
 RT "Solution structure of acidic fibroblast growth factor bound to 1,3,6-naphthalenesulfonate: a minimal model for the anti-tumoral action of suramin and suradistas.";
 RL J. Mol. Biol. 281:899-915(1998).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.

CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
 CC THAN DOES BFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC -----
 DR EMBL: M1361; AAA79245.1; -
 DR EMBL: X51943; CAA36206.1; -
 DR EMBL: M30492; AAA52446.1; -
 DR EMBL: M30490; AAA52446.1; JOINED.
 DR EMBL: M30491; AAA52446.1; JOINED.
 DR EMBL: M60515; AAA51672.1; -
 DR EMBL: M60516; AAA51673.1; -
 DR EMBL: M23087; AAA52638.1; -
 DR EMBL: M23086; AAA52638.1; JOINED.
 DR EMBL: S67291; AAB29057.2; -
 DR EMBL: X65778; CAA46661.1; -
 DR PIR: A23553; A23553.
 DR PIR: A24243; A24243.
 DR PIR: A24301; A24301.
 DR PIR: A24662; A24662.
 DR PIR: A24820; A24820.
 DR PIR: A26386; A26386.
 DR PIR: A33665; A33665.
 DR PIR: S18217; S18217.
 DR PDB: 2AFG; 15-OCT-95.
 DR PDB: 1AXM; 22-APR-98.
 DR PDB: 2AXM; 22-APR-98.
 DR PDB: 1RML; 11-NOV-98.
 DR GeneW: HGNC:3665; FGF1.
 DR MIM: 131220; -
 DR InterPro: IPR002209; HB/F_growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.
 DR PRINTS: PR00262; IL1HBGF.
 DR PRODOM: PD000831; HB/F_growthfact; 1.
 DR SMART: SM00442; FGF_1.
 DR PROSITE: PS00247; HBGF_FGF_1.
 DR Growth factor; Mitogen; Angiogenesis; Heparin-binding; Acetylation;
 DR 3D-structure.
 DR PROSPER: 1 15
 DR CHAIN 16 155
 DR MOD_RES 2 2
 DR BINDING 24 28
 DR BINDING 113 116
 DR SEQUENCE 155 AA; 17460 MW; F586E8BFB09F1580 CRC64;
 Query Match 50.5%; Score 418.5; DB 1; Length 155;
 Best Local Similarity 54.8%; Pred. No. 1.7e-36;
 Matches 86; Conservative 17; Mismatches 49; Indels 5; Gaps 2;
 QY 1 MAAGSTTLALPEDGSGAFPPGHFDPKPRLYCKNGGFLRHPDRVGVNREKSPHI 60
 DB 1 MAGEITTFALTEKEN--LPQNYKKPKLLVCSNGHFLRLPDGTVGTRDRSDHI 57
 QY KLQLOAEERGVSVIKGVCANRYLAMKEDGRLLSKCVTDCFFPERLESNNVYRGRXY 120
 DB 58 QLOLSAEVSEVYIKSTETQYIAMDIDGLYSGQTNECLFLERLENNHYNTYISKH 117
 QY 121 S--SWYVALKRTGYKGPRTGPGQKAILFLPSAKS 155
 DB 118 AEKMWFGVGLKKNKSGCRGPRTHYGOKAILFLPLVSS 154

ID FGF1 MOUSE STANDARD; PRT; 155 AA.
 AC P10935;
 DT 01-JUL-1989 (Rel. 11, Created)
 DT 01-JUL-1989 (Rel. 11, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (acidic fibroblast
 DE growth factor) (AFGF).
 DE GN FGF1 OR FGF-1 OR FGFR.
 OS Mus musculus (Mouse), and
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID:10090, 10116;
 RN [1]
 RN SEQUENCE FROM N.A.
 RC SPECIES=Rat;
 RX MEDLINE=89240051; PubMed=2470029;
 RA Goodrich S., Yan G.C., Bahrenburg K., Mansson P.E.;
 RT "The nucleotide sequence of rat heparin binding growth factor 1
 RT (HBGF-1)."
 RL Nucleic Acids Res. 17:2867-2867(1989).
 RN [2]
 RN SEQUENCE FROM N.A.
 RC SPECIES=Mouse;
 RX MEDLINE=90201563; PubMed=2318343;
 RA Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.;
 RT "Isolation of cDNAs encoding four mouse FGF family members and
 RT characterization of their expression patterns during embryogenesis.";
 RL Dev. Biol. 138:454-463(1990).
 RN [3]
 RN SEQUENCE FROM N.A.
 RC SPECIES=Mouse;
 RX MEDLINE=97128312; PubMed=8972905;
 RA Madadi F., Hackshaw K.V., Chiu I.M.;
 RT "Cloning and characterization of the mouse Fgf-1 gene.";
 RL Gene 179:231-236(1996).
 RN [4]
 RN SEQUENCE FROM N.A.
 RC SPECIES=Mouse; STRAIN=BALB/c;
 RX MEDLINE=97094746; PubMed=8939980;
 RA Alam K.V., Frosthholm A., Hackshaw K.V., Evans J.E., Rottler A.,
 RA Chiu I.M.;
 RT "Characterization of the 18 promoter of fibroblast growth factor 1
 RT and its expression in the adult and developing mouse brain.";
 RL J. Biol. Chem. 271:30263-30271(1996).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC -----
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 CC -----
 DR EMBL: X14232; CAA32448.1; -
 DR EMBL: M30641; AAA7618.1; -
 DR EMBL: U36459; AAC52969.1; -
 DR EMBL: U36457; AAC52969.1; JOINED.
 DR EMBL: U36458; AAC52969.1; JOINED.
 DR EMBL: U67610; AAC52907.1; -
 DR PIR: S04147; S04147.
 DR PIR: D37360; D37360.
 DR HSSP: P05230; 1RML.
 DR MGD: MGI:95515; Fgf1.
 DR InterPro: IPR002209; HB/F_growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF_1.

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DR PRINTS; PRO00262; ILHBGF.
DR Prodom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
DR Growth factor; Mltoegen; Angiogenesis; Heparin-binding.
FT PROPEP 1 15 HEPARIN-BINDING GROWTH FACTOR 1.
FT CHAIN 16 155
FT BINDING 24 28 HEPARIN (POTENTIAL).
FT BINDING 113 116 HEPARIN (POTENTIAL).
SQ SEQUENCE 155 AA; 17418 MW; 8880E4FF0FBA4161 CRC64;

Query Match 49.9%; Score 413.5; DB 1; Length 155;
Best Local Similarity 54.1%; Pred. No. 5,6e-36;
Matches 85; Conservative 18; Mismatches 49; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLCYKNGGFFLRHPDGRVDGVEKSDPHI 60
DB 1 MARGEITTFALTEKEN---LPLGNVKKPKLLYCSNGHFLRILPDGTVDGTRDRSDQHI 57
QY 61 KLOLOAEERGVSIKVCANRYLAMKEDGRLASKCVTDCECFEERLESNNVNTYSRKY 120
DB 58 QLOLSAESVGEVYIKGTETGQYLMPTSGLYGSQTPSEECFLERLEENHNTYTSKQH 117
QY 121 S--SWYVALKRTGQYKLGPKTGPCKAILFLPMGAKS 155
DB 118 AEKNWFGVLKKNKSCRGPRTHYGQKAILFLPLVSS 154

RESULT 14
FGFL_PIG STANDARD; PRT; 152 AA.
ID FGFL_PIG
AC P20002;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast
DE growth factor) (AFGF) (Alpha-endothelial cell growth factor)
DE (Fragment).
DE FGFL OR FGF-1.
GN Sus scrofa (Pig).
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Heart;
RX MEDLINE=92062117; PubMed=1719973;
RA Schmidt M., Sharma H.S., Scholt R.J., Schaper W.;
RT "Amplification and sequencing of mRNA encoding acidic fibroblast
RT growth factor (afgf) from porcine heart.";
RL Biochem. Biophys. Res. Commun. 180:853-859(1991).
RN [2]
RP SEQUENCE OF 22-41.
RX MEDLINE=69231704; PubMed=2714282;
RA Quinkler W., Maasberg M., Bernotat-Danielowski S., Luethke N.,
RA Sharma H.S., Schaper W.;
RT "Isolation of heparin-binding growth factors from bovine, porcine and
RT canine hearts.";
RL Eur. J. Biochem. 181:67-73(1989).
RN [1]
RP FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
THAN DOES BFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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DR EMBL; X60317; CAA42869.1; -
DR PIR; S03954; S03954.
DR HSSP; P05230; 2AXM.
DR InterPro; IPR002209; HB/F_growthfact.
DR Pfam; PF00167; FGF; 1.
DR Prodom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
DR Growth factor; Mltoegen; Angiogenesis; Heparin-binding.
FT PROPEP 1 15
FT CHAIN 16 >152 HEPARIN-BINDING GROWTH FACTOR 1.
FT BINDING 24 >152 ENDOTHELIAL CELL GROWTH FACTOR ALPHA.
FT BINDING 113 116 HEPARIN (POTENTIAL).
FT CONFLICT 31 31 C -> S (IN REF. 2).
FT CONFLICT 39 39 R -> Y (IN REF. 2).
FT NON_TER 152 152
SQ SEQUENCE 152 AA; 17103 MW; AE853B0A92F9ABF4 CRC64;

Query Match 49.8%; Score 412.5; DB 1; Length 152;
Best Local Similarity 54.9%; Pred. No. 7e-36;
Matches 84; Conservative 18; Mismatches 46; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLCYKNGGFFLRHPDGRVDGVEKSDPHI 60
DB 1 MARGEITTFALTEKEN---LPLGNVKKPKLLYCSNGHFLRILPDGTVDGTRDRSDQHI 57
QY 61 KLOLOAEERGVSIKVCANRYLAMKEDGRLASKCVTDCECFEERLESNNVNTYSRKY 120
DB 58 QLOLSAESVGEVYIKGTETGQYLMPTSGLYGSQTPSEECFLERLEENHNTYTSKQH 117
QY 121 S--SWYVALKRTGQYKLGPKTGPCKAILFLPM 151
DB 118 AEKNWFGVLKKNKSCRGPRTHYGQKAILFLPL 150

RESULT 15
FGFL_BOVIN STANDARD; PRT; 155 AA.
ID FGFL_BOVIN
AC P03958;
DT 23-OCT-1986 (Rel. 02, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast
DE growth factor) (AFGF) (Prostateptin) (Endothelial cell growth factor
DE beta and alpha chains) (Acidic eye-derived growth factor II) (EDGF
DE II).
DE FGFL OR FGF-1 OR FGFA OR HBGF-1 OR AFGF.
GN Bos taurus (Bovine).
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Retina;
RX MEDLINE=89083506; PubMed=3205724;
RA Halley C., Coutois Y., Laurent M.;
RT "Nucleotide sequence of bovine acidic fibroblast growth factor cDNA.";
RL Nucleic Acids Res. 16:10913-10913(1988).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Retina;
RX MEDLINE=89078619; PubMed=2849564;
RA Alterio J., Halley C., Brou C., Soussi T., Coutois Y., Laurent M.;
RT "Characterization of a bovine acidic FGF cDNA clone and its
RT expression in brain and retina.";
RL FEBS Lett. 242:41-46(1988).
RN [3]
RP SEQUENCE OF 2-155.

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RA MEDLINE=87016918; PubMed=3532107.
 RA Burgues W.H., Mehlan T., Marxhak D.R., Fraser B.A., Maciag T.;
 RA "Structural evidence that endothelial cell growth factor beta is the
 RA precursor of both endothelial cell growth factor alpha and acidic
 RA fibroblast growth factor";
 RA Proc. Natl. Acad. Sci. U.S.A. 83:7216-7220(1986).
 RA [4]
 RP SEQUENCE OF 2-155.
 RX MEDLINE=87026586; PubMed=3768327;
 RA Ciabba J.W., Armes L.G., Carr S.A., Johnson C.M., Roberts G.D.,
 RA Bordoii R.S., McKeelhan W.L.;
 RA "Complete primary structure of prostatiopin, a prostate epithelial
 RA cell growth factor";
 RA Biochemistry 25:4988-4993(1986).
 RN [5]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86070224; PubMed=4071057;
 RA Gimenez-Galligo G., Rodkey J., Bennett C., Rios-Candelore M.,
 RA DiSalvo J., Thomas K.;
 RA "Brain-derived acidic fibroblast growth factor: complete amino acid
 RA sequence and homologies";
 RL Science 230:1385-1388(1985).
 RN [6]
 RP SEQUENCE OF 16-44, AND COMPOSITION.
 RX MEDLINE=86055750; PubMed=4065099;
 RA Boehlen P., Esch F., Baird A., Gospodarowicz D.;
 RA "Acidic fibroblast growth factor (FGF) from bovine brain:
 RA amino-terminal sequence and comparison with basic FGF";
 RL EMBO J. 4:1951-1956(1985).
 RN [7]
 RP SEQUENCE OF 16-56 FROM N.A.
 RX MEDLINE=86261806; PubMed=2425435;
 RA Abraham U.A., Mergia A., Whang J.L., Tunolo A., Friedman J.,
 RA Herlihd K.A., Gospodarowicz D., Fiddes J.C.;
 RA "Nucleotide sequence of a bovine clone encoding the angiogenic
 RA protein, basic fibroblast growth factor";
 RL Science 233:545-548(1986).
 RN [8]
 RP SEQUENCE OF 16-45.
 RX MEDLINE=89231704; PubMed=2714282;
 RA Ounkler W., Maaberg M., Bernotat-Danielowski S., Luethe N.,
 RA Sharma H.S., Schaper W.;
 RA "Isolation of heparin-binding growth factors from bovine, porcine and
 RA canine hearts";
 RL Eur. J. Biochem. 181:67-73(1989).
 RN [9]
 RP SEQUENCE OF 1-18 FROM N.A.
 RA Philippe J.M., Renaud F., Desset S., Laurent M.;
 RA Submitted (JUL-1992) to the EMBL/Genbank/DBJ databases.
 RN [10]
 RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
 RX MEDLINE=91095983; PubMed=1702556;
 RA Zhu X., Komiya H., Chirino A., Faham S., Fox G.M., Arakawa T.,
 RA Hsu B.T., Rees D.C.;
 RA "Three-dimensional structures of acidic and basic fibroblast growth
 RA factors";
 RL Science 251:90-93(1991).
 CC CC - FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VITRO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC CC - SUBUNIT: MONOMER.
 CC CC - MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
 CC THAN DOES BFGF.
 CC CC - SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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[illegible]

Db 58 QLOLCAESIGEVIKSTETGQFLAMDTGLLYGSQTPNECLFLERLENNHNTYISKH 117

Oy 121 SS--WYALKRTGQYKLGPKTGPGQKAILFLPMASKS 155

Db 118 AERKMFVGLKKNRSLGPRTHFGOKAILFLPLPVSS 154

Search completed: December 16, 2002, 17:56:54
JOB time : 9.5 secs

DR PROSITE; PS00247; HBGF_FGF; 1.
SQ SEQUENCE 196 AA; 21203 MW; D6B5447137E60343 CRC64;
Query Match 98.7%; Score 817; DB 4; Length 196;
Best Local Similarity 98.7%; Pred. No. 6.7e-81;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAGSTITLPALEPGGSGAFPPGHRKDPRLKCKNGGFFLRHPDGRVDGVREKSDPHI 60
DB 42 MAGSTITLPALEPGGSGAFPPGHRKDPRLKCKNGGFFLRHPDGRVDGVREKSDPHI 101

QY 61 KLOLOAEEGVVSIKVCANRYLAMKEDGRLASKCVTECEFFERLESNNVTYSRKY 120
DB 102 KLOLOAEEGVVSIKVCANRYLAMKEDGRLASKCVTECEFFERLESNNVTYSRKY 161

QY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
DB 162 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 196

RESULT 2
Q925A3 PRELIMINARY; PRT; 153 AA.
AC Q925A3;
DT 01-DEC-2001 (TREMBLrel. 19, Created)
DT 01-DEC-2001 (TREMBLrel. 19, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxId=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N;
RA Dicks R.P., Griep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
RT expressed in mouse embryos."
RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AY027551; AAK52308.1; -
DR InterPro: IPR002209; HB/F_growthfact.
DR Pfam: PF00167; FGF; 1.
DR ProDom: PD000831; HB/F_growthfact; 1.
SQ SEQUENCE 153 AA; 17024 MW; AD8163CD8FA2FPAAB CRC64;

Query Match 92.5%; Score 766; DB 11; Length 153;
Best Local Similarity 94.2%; Pred. No. 1.7e-75;
Matches 146; Conservative 4; Mismatches 3; Indels 2; Gaps 2;

QY 1 MAGSTITLPALEPGGSGAFPPGHRKDPRLKCKNGGFFLRHPDGRVDGVREKSDPHI 60
DB 1 MAGSTITLPALEPGGSGAFPPGHRKDPRLKCKNGGFFLRHPDGRVDGVREKSDPHI 59

QY 61 KLOLOAEEGVVSIKVCANRYLAMKEDGRLASKCVTECEFFERLESNNVTYSRKY 120
DB 60 KLOLOAEEGVVSIKVCANRYLAMKEDGRLASKCVTECEFFERLESNNVTYSRKY 118

QY 121 SSMYVALKRTGYKLGPKTGPQKAILFLPMSAKS 155
DB 119 SSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 153

RESULT 3
Q60487 PRELIMINARY; PRT; 170 AA.
AC Q60487;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE Fibroblast growth factor 2 (FGF-2) (Fibroblast growth factor, basic)
DE (BFGF) (Heparin-binding growth factor 2) (HBGF-2) (Proteotropin)
DE (Prostatic growth factor) (Fragments).

GN FGF2.
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriognathi; Caviidae; Cavia.
OX NCBI_TaxId=10141;
RN [1]
RP SEQUENCE OF 53-170 FROM N.A.
RC TISSUE=PROSTATE;
RL Ricciardelli C.;
RL Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.
RN [2]
RN SEQUENCE OF N-TERMINUS, PARTIAL SEQUENCE, AND ALTERNATIVE SPLICING.
RX MEDLINE=89273588; PubMed=2730645;
RA Sommer A., Moscatelli D., Rifkin D.B.;
RT "An amino-terminally extended and post-translationally modified form
RT of a 25KD basic fibroblast growth factor."
RL Biochem. Biophys. Res. Commun. 160:1267-1274 (1989).
RN [3]
RN PARTIAL SEQUENCE, AND METHYLATION.
RX MEDLINE=91322114; PubMed=1713785;
RA Burgess W.H., Bitik J., Mehlman T., Quarto N., Rifkin D.B.;
RT "Direct evidence for methylation of arginine residues in high
RT molecular weight forms of basic fibroblast growth factor."
RL Cell Regul. 2:87-93 (1991).
RN [4]
RN CHARACTERIZATION.
RC TISSUE=BRAIN.
RX MEDLINE=97289686; PubMed=3475702;
RA Moscatelli D., Joseph-Silverstein J., Manejias R., Rifkin D.B.;
RT "Mr 25,000 heparin-binding protein from guinea pig brain is a high
RT molecular weight form of basic fibroblast growth factor."
RL Proc. Natl. Acad. Sci. U.S.A. 84:5778-5782 (1987).
CC -1- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTROPHIC
CC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC
CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND
CC HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOATTRACTANT FOR
CC MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION,
CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS
CC SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
CC ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
CC -1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFR1 AND AT LEAST
CC ONE HEPARIN SULFATE (BY SIMILARITY).
CC -1- ALTERNATIVE PRODUCTS: AT LEAST TWO ISOFORMS, 18 KDA AND 25 KDA
CC (SHOWN HERE). MAY BE PRODUCED BY USE OF ALTERNATIVE TRANSLATION
CC INITIATION SITES. BOTH FORMS ARE ACTIVE.
CC -1- PTM: THE N-TERMINAL OF ISOFORM 18 KDA IS BLOCKED (PROBABLE).
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -1- CAUTION: THIS IS A CONCEPTUAL TRANSLATION; MANY FRAMESHIFTS WERE
CC INTRODUCED FROM RESIDUES 77, 88, 93 AND 149 DOWNWARD TO EXTEND THE
CC SIMILARITY TO THE HUMAN SEQUENCE AS WELL AS ON THE BASIS OF
CC PARTIAL AMINO-ACID SEQUENCING.
CC EMBL; L75974; AAA85394.1; ALT_FRAME.
DR HSPF; P09038; 1BA.
DR InterPro: IPR002209; HB/F_growthfact.
DR InterPro: IPR002348; ILL_HBGF.
DR PRINTS; PR00262; ILLHBGF.
DR ProDom: PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Vascularization; Heparin-binding;
KW Alternative initiation; Methylation; Phosphorylation;
KW Developmental protein.
FT NON_TER 1
FT NON_CONS 15
FT CHAIN <1 170
FT CHAIN 22 170
FT INIT_MET 22 22
FT DOMAIN 11 14
FT NON_CONS 50 51
FT SITE 61 63
FT SITE 103 105
FT BINDING 50 51
FT BINDING 105 105

25 KDA BASIC FIBROBLAST GROWTH FACTOR.
18 KDA BASIC FIBROBLAST GROWTH FACTOR.
FOR 18 KDA FORM.
POLY-ALA.
CELL ATTACHMENT SITE (POTENTIAL).
CELL ATTACHMENT SITE (POTENTIAL).
HEPARIN (BY SIMILARITY).
HEPARIN (BY SIMILARITY).

FT BINDING 143 159 HEPARIN (BY SIMILARITY).
 FT MOD_RES 4 4 METHYLATION (MONO- OR DI-).
 FT MOD_RES 6 6 METHYLATION (MONO- OR DI-).
 FT MOD_RES 8 8 METHYLATION (MONO- OR DI-).
 FT MOD_RES 88 88 PHOSPHORYLATION (BY SIMILARITY).
 FT MOD_RES 136 136 PHOSPHORYLATION (BY SIMILARITY).
 SQ SEQUENCE 170 AA; 18354 MW; F36BDC736E5EBE CRC64;
 Query Match 89.4%; Score 740; DB 11; Length 170;
 Best Local Similarity 91.6%; Pred. No. 1.3e-72;
 Matches 142; Conservative 2; Mismatches 5; Indels 6; Gaps 1;
 QY 1 MAAGSITLPLPEDGSGAPFPGHFKDPKRLYCKNGGFFLRHPDGRVDGVEKSDPHI 60
 DB 22 MAAGSITLPLPEDGSGAPFPGHFKDP-----NGFFLRHPDGRVDGVEKSDPHI 75
 QY 61 KLOLAEEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 DB 76 KLOLAEEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 135
 QY 121 SSMYVALKRTGOYKLGPKTGPQOKAILFLPMSAKS 155
 DB 136 SSMYVALKRTGOYKLGPKTGPQOKAILFLPMSAKS 170
 RESULT 4
 Q09Y92 PRELIMINARY; PRT; 155 AA.
 ID 090Y92
 AC 090Y92;
 DT 01-DEC-2001 (TREMblrel. 19, Created)
 DT 01-DEC-2001 (TREMblrel. 19, Last sequence update)
 DT 01-JUN-2002 (TREMblrel. 21, Last annotation update)
 DE Fibroblast growth factor-2.
 GN FGF-2.
 OS Cynops pyrrhogaster (Japanese common newt).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
 OX NCBI_TaxID=8330;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Susaki K., Nakamura K., Chiba C., Saito T.;
 RT "Expression of FGF2 during newt retinal development and
 RT regeneration.";
 RL Submitted (JUL-2001) to the EMBL/Genbank/DBJ databases.
 DR EMBL: AB064664; BAB63249.1;
 DR InterPro: IPR002309; HB/F_growthfact.
 DR Pfam: PF00167; FGF, 1.
 DR ProDom: PD000831; HB/F_growthfact, 1.
 DR ProSITE: PS00247; HBGF_FGF; UNKNOWN, 1.
 SQ SEQUENCE 155 AA; 17278 MW; 2B583058538AB8D9 CRC64;

Query Match 84.8%; Score 702; DB 13; Length 155;
 Best Local Similarity 85.8%; Pred. No. 1.6e-68;
 Matches 133; Conservative 8; Mismatches 14; Indels 0; Gaps 0;

QY 1 MAAGSITLPLPEDGSGAPFPGHFKDPKRLYCKNGGFFLRHPDGRVDGVEKSDPHI 60
 DB 1 MAAGSITLPLPEDGSGAPFPGHFKDPKRLYCKNGGFFLRHPDGRVDGVEKSDPHI 60
 QY 61 KLOLAEEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 DB 61 KLOLAEEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 QY 121 SSMYVALKRTGOYKLGPKTGPQOKAILFLPMSAKS 155
 DB 121 SSMYVALKRTGOYKLGPKTGPQOKAILFLPMSAKS 155
 RESULT 5
 Q07767 PRELIMINARY; PRT; 130 AA.
 ID 077767
 AC 077767;
 DT 01-NOV-1998 (TREMblrel. 08, Created)

DT 01-NOV-1998 (TREMblrel. 08, Last sequence update)
 DT 01-JUN-2002 (TREMblrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (BFGF) (FGF-2) (Heparin-binding growth
 DE factor 2) (HBGF-2) (Prostatectropin) (Prostatic growth factor)
 DE (Fragment).
 GN BFGF.
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 OX NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=ADRENAL GLAND;
 RA Trochta O.A., Jacobs R.M., Lamarre J.;
 RT "The role bFGF in canine Hemangiosarcoma."
 RL Submitted (APR-1998) to the EMBL/Genbank/DBJ databases.
 CC -1- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROPROTEIC
 CC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC
 CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND
 CC HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOATTRACTANT FOR
 CC MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION,
 CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS
 CC SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
 CC ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
 CC -1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFR1 AND AT LEAST
 CC ONE HEPARIN SULFATE (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC EMBL: AF060562; AAC35912.1; -.
 DR HSBP; P09038; 1BF.
 DR InterPro: IPR002209; HB/F_growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF, 1.
 DR PRINTS: PR00262; IL1HBGF.
 DR ProDom: PD000831; HB/F_growthfact, 1.
 DR SMART: SM00442; FGF, 1.
 DR ProSITE: PS00247; HBGF_FGF, 1.
 KW Growth factor; Mitogen; Vascularization; Heparin-binding;
 KW Phosphorylation; Developmental protein.
 FT NON_TER 1 1
 FT SITE 21 23 CELL ATTACHMENT SITE (POTENTIAL).
 FT SITE 63 65 CELL ATTACHMENT SITE (POTENTIAL).
 FT BINDING 10 11 HEPARIN (BY SIMILARITY).
 FT BINDING 65 65 HEPARIN (BY SIMILARITY).
 FT BINDING 103 113 HEPARIN (BY SIMILARITY).
 FT MOD_RES 48 48 PHOSPHORYLATION (BY SIMILARITY).
 FT MOD_RES 96 96 PHOSPHORYLATION (BY SIMILARITY).
 FT NON_TER 130 130
 SQ SEQUENCE 130 AA; 14902 MW; 21900876E878FAEA CRC64;

Query Match 83.7%; Score 693; DB 6; Length 130;
 Best Local Similarity 99.2%; Pred. No. 1.2e-67;
 Matches 129; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 26 FKDPRLYCKNGGFFLRHPDGRVDGVEKSDPHIKLOLAEEERGVSISIKVCANRYLAM 85
 DB 1 FKDPRLYCKNGGFFLRHPDGRVDGVEKSDPHIKLOLAEEERGVSISIKVCANRYLAM 60
 QY 86 KEDGRLASKCVTDECFEERLESNNYNTYRSRYSSMYVALKRTGOYKLGPKTGPQOKA 145
 DB 61 KEDGRLASKCVTDECFEERLESNNYNTYRSRYSSMYVALKRTGOYKLGPKTGPQOKA 120
 QY 146 ILFLPMSAKS 155
 DB 121 ILFLPMSAKS 130
 RESULT 6
 Q08QF9 PRELIMINARY; PRT; 155 AA.
 ID 08QF9
 AC 08QF9;
 DT 01-JUN-2002 (TREMblrel. 21, Created)
 DT 01-JUN-2002 (TREMblrel. 21, Last sequence update)
 DT 01-JUN-2002 (TREMblrel. 21, Last annotation update)

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DE Basic fibroblast growth factor.
GN FG2.
OS Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Acanthomorphi; Acanthopterygii; Percomorpha; Tetraodontiformes;
OC Tetraodontidae; Takifugu.
OX NCBI_TaxID=31033;
RN [1]
RP SEQUENCE FROM N.A.
RA Borchersby M.R.;
RT "Comparative vertebrate genomic sequence analysis based on
RT Fugu rubripes."
RL Thesis (2001); University College London, London, United Kingdom.
RD EMBL: AJ246040; CADI9830.1; -.
SQ SEQUENCE 155 AA; 17113 MW; AEFELDDBC78FBBE CRC64;

Query Match 75.0%; Score 621; DB 13; Length 155;
Best Local Similarity 77.3%; Pred. No. 1.1e-59;
Matches 119; Conservative 4; Mismatches 31; Indels 0; Gaps 0;

Qy 1 MAAGSITLLPALPEDGSGAAPPGRHFKDKRLYCKNGGFELTHPDGRVDSRKSDDPHI 60
Db 1 MATGGITTLPTSPEDSGSGFPFGSGFKDKRLYCKNGGFELIRSDGAVGTREKTDPHI 60
Qy 61 KLOLAERGVVSIKVCANRYLAKMEDRLASKCVTDECFEERLESNNNTYRSRKY 120
Db 61 KLOLAOTSVGEVIVIGVCANRYLAMNRDRLGGMKATDCEHLEERLESNNNTYRSRKY 120
Qy 121 SSMVVALKRTGQYKLGPKTGPOKAILFLPMSAK 154
Db 121 PMMFVGLTRTGNVKSQTKTGPOKAILFLPMSAK 154

RESULT 7
Q9BDX1 PRELIMINARY; PRT; 111 AA.
ID Q9BDX1;
AC Q9BDX1;
DT 01-JUN-2001 (Tremblrel. 17, Created)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Basic fibroblast growth factor (Fragment).
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RA Sekhon H.S., Keller J.K., Spindel E.R.;
RT "Alterations in collagen and Elastin Gene Expression in Fetal
RT Pulmonary Vessels in Monkeys Following Prenatal Nicotine Exposure: A
RT Possible Role of alpha7 Nicotinic Acetylcholine Receptor in Persistent
RT Pulmonary Hypertension."
RL Submitted (MAR-2000) to the EMBL/Genbank/DBJ databases.
RD EMBL: AF251270; AAK37962.1; -.
DR HSSP; P09038; 2EGF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IIL_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IILHBGF.
DR PRODOM; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
FT NON_TER 1
FT NON_TER 111
SQ SEQUENCE 111 AA; 12633 MW; EC0967A5261F5487 CRC64;

Query Match 69.6%; Score 576; DB 6; Length 111;
Best Local Similarity 98.2%; Pred. No. 5.6e-55;
Matches 109; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 43 IHPDGRVDSRKSDDPHIKLOLAERGVVSIKVCANRYLAKMEDRLASKCVTDECF 102

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Db 1 IHPDGRVDSRKSDDPHIKLOLAERGVVSIKVCANRYLAKMEDRLASKCVTDECF 60
Qy 103 FFERLESNNNTYRSRKYSSMYVALKRTGQYKLGPKTGPOKAILFLPMSA 153
Db 61 FFERLESNNNTYRSRKYSSMYVALKRTGQYKLGPKTGPOKAILFLPMSA 111

RESULT 8
Q9N1S7 PRELIMINARY; PRT; 108 AA.
ID Q9N1S7;
AC Q9N1S7;
DT 01-OCT-2000 (Tremblrel. 15, Created)
DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Basic fibroblast growth factor (Fragment).
OS Capreolus capreolus (Ree deer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoidae;
OC Cervidae; Odocoileinae; Capreolus.
OX NCBI_TaxID=9858;
RN [1]
RP SEQUENCE FROM N.A.
RA MEDLINE=20532861; PubMed=11078967;
RC TISSUE=TESTIS;
RX Wagener A., Bliotner S., Goritz F., Fickel U.;
RT "Detection of growth factors in the testis of roe deer (Capreolus
RT capreolus)."
RL Anim. Reprod. Sci. 64:65-75(2000).
DR EMBL; AF152587; AAF73226.1; -.
DR HSSP; P09038; 4RFG.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IIL_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IILHBGF.
DR PRODOM; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
FT NON_TER 1
FT NON_TER 108
SQ SEQUENCE 108 AA; 12399 MW; 6BC7B7244214567E CRC64;

Query Match 69.1%; Score 572; DB 6; Length 108;
Best Local Similarity 100.0%; Pred. No. 1.5e-54;
Matches 108; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 42 IHPDGRVDSRKSDDPHIKLOLAERGVVSIKVCANRYLAKMEDRLASKCVTDEC 101
Db 1 IHPDGRVDSRKSDDPHIKLOLAERGVVSIKVCANRYLAKMEDRLASKCVTDEC 60
Qy 102 FFERLESNNNTYRSRKYSSMYVALKRTGQYKLGPKTGPOKAILFL 149
Db 61 FFERLESNNNTYRSRKYSSMYVALKRTGQYKLGPKTGPOKAILFL 108

RESULT 9
Q98TD8 PRELIMINARY; PRT; 125 AA.
ID Q98TD8;
AC Q98TD8;
DT 01-JUN-2001 (Tremblrel. 17, Created)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Fibroblast growth factor-2 (Fragment).
OS Cynops pyrrhogaster (Japanese common newt).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Caudata; Salamandridae; Salamandridae; Cynops.
OX NCBI_TaxID=8330;
RN [1]
RP SEQUENCE FROM N.A.
RA Mizuno N., Hayashi T., Kondoh H., Okamoto M.;
RT "Cynops fibroblast growth factor-2."

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RL Submitted (OCT-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB049625; BAB0835.1; -
DR HSBP; P09038; 18PF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
FT NON TER
SQ SEQUENCE 125 AA; 14244 MW; 5C27F41DC6E60C13 CRC64;

Query Match
Best Local Similarity 68.2%; Score 565; DB 13; Length 125;
Matches 108; Conservative 6; Mismatches 10; Indels 0; Gaps 0;

QY 32 LYCKNGGFELIHPDGRVGVREKSDPHIKLQLOAERGVSIGVCANRYLAMKEDGRL 91
DB 2 LYCKNGGFELINSQKVDGAREKSDSIKLOAERGVSIGVCANRYLAMKDDGRL 61
QY 92 LASKCVTDECFEERLESNNYNTYRSKXSSWYVALKRTGYKLGPTGPGOKAILFLPM 151
DB 62 MALKMITDECFEERLESNNYNTYRSKXSDWYVALKRTGYKNGSKTGAGOKAILFLPM 121
QY 152 SAKS 155
DB 122 SAKS 125

RESULT 10
Q925A1 PRELIMINARY; PRT; 109 AA.
ID Q925A1
AC Q925A1;
DT 01-DEC-2001 (TREMBlrel. 19, Created)
DT 01-DEC-2001 (TREMBlrel. 19, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N;
RA Dicks R.P., Griep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
RT expressed in mouse embryos."
RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
RL EMBL; AY027558; AKS2310.1; -.
DR InterPro; IPR002309; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR PROSITE; PS00247; HBGF_FGF; UNKNOWN 1.
SQ SEQUENCE 109 AA; 12388 MW; 61077ADE3303C860 CRC64;

Query Match
Best Local Similarity 58.9%; Score 488; DB 11; Length 109;
Matches 94; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 60 IKLOAERGVSIGVCANRYLAMKEDGRLILASKCVTDECFEERLESNNYNTYRSRK 119
DB 14 IKLOAERGVSIGVCANRYLAMKEDGRLILASKCVTECFEERLESNNYNTYRSRK 73
QY 120 YSSWYVALKRTGYKLGPTGPGOKAILFLPM SAKS 155
DB 74 YSSWYVALKRTGYKLGSKTGPGOKAILFLPM SAKS 109

RESULT 11

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Q925A2 PRELIMINARY; PRT; 112 AA.
ID Q925A2
AC Q925A2;
DT 01-DEC-2001 (TREMBlrel. 19, Created)
DT 01-DEC-2001 (TREMBlrel. 19, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N;
RA Dicks R.P., Griep A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
RT expressed in mouse embryos."
RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
RL EMBL; AY027557; AKS2309.1; -.
DR InterPro; IPR002309; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF; 1.
DR PRINTS; PR00262; IL1HBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR PROSITE; PS00247; HBGF_FGF; UNKNOWN 1.
SQ SEQUENCE 112 AA; 12725 MW; B0057ABE0257CCB CRC64;

Query Match
Best Local Similarity 58.5%; Score 484; DB 11; Length 112;
Matches 93; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 61 KLOAERGVSIGVCANRYLAMKEDGRLILASKCVTDECFEERLESNNYNTYRSKY 120
DB 18 KLOAERGVSIGVCANRYLAMKEDGRLILASKCVTECFEERLESNNYNTYRSKY 77
QY 121 SSWYVALKRTGYKLGPTGPGOKAILFLPM SAKS 155
DB 78 SSWYVALKRTGYKLGSKTGPGOKAILFLPM SAKS 112

RESULT 12
Q07659 PRELIMINARY; PRT; 146 AA.
ID Q07659
AC Q07659;
DT 01-NOV-1996 (TREMBlrel. 01, Created)
DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)
DT 01-JUN-2002 (TREMBlrel. 21, Last annotation update)
DE Fibroblast growth factor.
GN BFGF.
OS Gallus gallus (Chicken).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC Gallus.
OX NCBI_TaxID=9031;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=93246053; PubMed=7683281;
RA Borja A.Z., Zeller R., Meljers C.;
RT "Expression of alternatively spliced bfgf first coding exon and
RT antisense mRNAs during chicken embryogenesis."
RL Dev. Biol. 157:110-118(1993).
RN [2]
RP SEQUENCE OF 52-85 FROM N.A.
RX MEDLINE=90382254; PubMed=2401202;
RA Wiltrant E., Gruenbaum Y., Shohat H., Ziv T.;
RT "Fibroblast growth factor during mesoderm induction in the early chick
RT embryo."
RL Development 109:387-393(1990).
DR EMBL; M95706; AAA48616.1; -.
DR EMBL; X56804; CA47039.1; -.
DR HSBP; P09038; 2BPH.
DR InterPro; IPR002209; HB/F_growthfact.

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DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 SO SEQUENCE 146 AA; 16182 MW; A7CB97BCB456E247 CRC64;

Query Match 58.0%; Score 480.5; DB 13; Length 146;
 Best Local Similarity 66.7%; Pred. No. 2e-44;
 Matches 98; Conservative 8; Mismatches 14; Indels 27; Gaps 2;

QY 9 LPAIPEDGSGAPPPGHPKDKRLKCKNGFFLRHPDGRVDYREKSDPHIKLOLAEE
 DB 27 VPSLSPDGGV-----LMEYRPDERVSAM-----VKLOLAEE 59

QY 69 RGVVISIKGVCAKRYLAKMEDGRLLAKCVTDCFFEELENNNTYRSRKYSSMYVALK 128
 DB 60 RGVVISIKGVSAKRYLAKMEDGRLLAKCVTDCFFEELENNNTYRSRKYSDMYVALK 119

QY 129 RTGQYKLGPKTPGOKAILFLPMSAKS 155
 DB 120 RTGQYKGPKTGPGOKAILFLPMSAKS 146

RESULT 13
 ID P79706 PRELIMINARY; PRT; 101 AA.
 AC P79706;
 DT 01-MAY-1997 (TREMBLrel. 03, Created)
 DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Basic FGF (Fragment).
 OS Cynops pyrrhogaster (Japanese common newt).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Caudata; Salamandridae; Cynops.
 NC NCBITaxID=8330;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=EMBRYO;
 RA Suzuki A.S., Tabata T., Sakaguchi K., Takabatake T., Takeshima K.,
 RA Kaneda T.;
 RT "Serial expression of the genes in a mesodermalizing ectoderms of
 RT early Cynops gastrula.";
 RL Submitted (NOV-1996) to the EMBL/Genbank/DBJ databases.
 DR EMBL; D88443; BAA13958.1; -.
 DR HSSP; P09038; 4FGF.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 FT NON_TER 1
 FT NON_TER 1
 SO SEQUENCE 101 AA; 11907 MW; 7A1AC866C1F457A CRC64;

Query Match 57.9%; Score 479; DB 13; Length 101;
 Best Local Similarity 88.1%; Pred. No. 1.8e-44;
 Matches 89; Conservative 6; Mismatches 6; Indels 0; Gaps 0;

QY 29 PKRLCYCKNGFFLRHPDGRVDYREKSDPHIKLOLAEEGVVISIKGVCAKRYLAKMED 88
 DB 1 PKRLCYCKNGFFLRHPDGRVDYREKSDPHIKLOLAEEGVVISIKGVCAKRYLAKMED 60

QY 89 GRLLASKCVTDCFFEELENNNTYRSRKYSSMYVALK 129
 DB 61 GRLLAKWITDCFFEELENNNTYRSRKYSDMYVALK 101

RESULT 14
 Q8WMP4

ID Q8WMP4 PRELIMINARY; PRT; 87 AA.
 AC Q8WMP4;
 DT 01-MAR-2002 (TREMBLrel. 20, Created)
 DT 01-MAR-2002 (TREMBLrel. 20, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2 (Fragment).
 GN FGF2.
 OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 NC NCBITaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=ENDOMETRIUM;
 RA Einspanier R.;
 RL Submitted (JUN-2001) to the EMBL/Genbank/DBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=ENDOMETRIUM;
 RA Welter H.;
 RL Thesis (2002), Department of Physiology, University of Munich,
 RL Freising, Germany.
 DR EMBL; AJ319906; CAC86028.1; -.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
 FT NON_TER 1
 FT NON_TER 87
 SO SEQUENCE 87 AA; 10128 MW; 52382DDF0245739E CRC64;

Query Match 55.6%; Score 460; DB 6; Length 87;
 Best Local Similarity 100.0%; Pred. No. 1.7e-42;
 Matches 87; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 41 LRHPDGRVDYREKSDPHIKLOLAEEGVVISIKGVCAKRYLAKMEDGRLLASKCVTDE 100
 DB 1 LRHPDGRVDYREKSDPHIKLOLAEEGVVISIKGVCAKRYLAKMEDGRLLASKCVTDE 60

QY 101 CFFERLESNNNTYRSRKYSSMYVAL 127
 DB 61 CFFERLESNNNTYRSRKYSSMYVAL 87

RESULT 15
 ID Q8NOV2 PRELIMINARY; PRT; 76 AA.
 AC Q8NOV2;
 DT 01-OCT-2000 (TREMBLrel. 15, Created)
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (Fragment).
 GN FGF-2.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 NC NCBITaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=FETAL PLACENTAL ARTERY;
 RA Zheng J., Tsol S.C., Magness R.R.;
 RL "Growth factor expression in ovine fetal placental artery endothelial
 RT cells.";
 RL Submitted (MAR-2000) to the EMBL/Genbank/DBJ databases.
 DR EMBL; AF250027; AAF65566.1; -.
 DR HSSP; P09038; 4FGF.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.

DR PRINTS; PR00262; I1HBGF.
DR ProdDom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
FT NON_TER 1
FT NON_TER 76
SQ SEQUENCE 76 AA; 8796 MW; 7D984E2F97453B20 CRC64;
Query Match 41.3%; Score 342; DB 6; Length 76;
Best Local Similarity 100.0%; Pred. No. 1e-29;
Matches 65; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 57 DPHIKLQQAEERGVSTIKGYCANRYLANKEDGRLLASKCVTDECFPERLESNNYNTYR 116
Db 1 DPHIKLQQAEERGVSTIKGYCANRYLANKEDGRLLASKCVTDECFPERLESNNYNTYR 60
QY 117 SRKYS 121
Db 61 SRKYS 65

Search completed: December 16, 2002, 17:57:54
Job time : 27 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:52:55 ; Search time 32 Seconds

(without alignments)
645.433 Million cell updates/sec

Title: 'US-09-886-856-8

Perfect score: 826
Sequence: 1 MAAGSITLPLALPENGSSGA.....GSKTGPCKALFLPMSAKS 155

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :
1: A_Geneseq.101002.*
2: /SID2/gcgdata/geneseq/geneseq-emb1/AA1980.DAT:*
3: /SID2/gcgdata/geneseq/geneseq-emb1/AA1981.DAT:*
4: /SID2/gcgdata/geneseq/geneseq-emb1/AA1982.DAT:*
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13: /SID2/gcgdata/geneseq/geneseq-emb1/AA1991.DAT:*
14: /SID2/gcgdata/geneseq/geneseq-emb1/AA1992.DAT:*
15: /SID2/gcgdata/geneseq/geneseq-emb1/AA1993.DAT:*
16: /SID2/gcgdata/geneseq/geneseq-emb1/AA1994.DAT:*
17: /SID2/gcgdata/geneseq/geneseq-emb1/AA1995.DAT:*
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19: /SID2/gcgdata/geneseq/geneseq-emb1/AA1997.DAT:*
20: /SID2/gcgdata/geneseq/geneseq-emb1/AA1998.DAT:*
21: /SID2/gcgdata/geneseq/geneseq-emb1/AA1999.DAT:*
22: /SID2/gcgdata/geneseq/geneseq-emb1/AA2000.DAT:*
23: /SID2/gcgdata/geneseq/geneseq-emb1/AA2001.DAT:*
24: /SID2/gcgdata/geneseq/geneseq-emb1/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|-------------|--------------------|
| 1 | 826 | 100.0 | 155 | 8 AAP70301 | Sequence of human |
| 2 | 826 | 100.0 | 155 | 8 AAP94038 | Human basic fibrob |
| 3 | 826 | 100.0 | 155 | 11 AAR05314 | Human basic fibrob |
| 4 | 826 | 100.0 | 155 | 13 AAR22232 | bFGF truncated at |
| 5 | 826 | 100.0 | 155 | 14 AAR40159 | Human bFGF peptide |
| 6 | 826 | 100.0 | 155 | 16 AAR80777 | Fibroblast growth |
| 7 | 826 | 100.0 | 155 | 16 AAR70204 | Human bFGF. Homo |
| 8 | 826 | 100.0 | 155 | 16 AAR70823 | FGF-2. Homo sapie |
| 9 | 826 | 100.0 | 155 | 16 AAR33338 | Human fibronectin |
| 10 | 826 | 100.0 | 155 | 18 AAM19595 | Biologically activ |

| | | | | | |
|----|-----|-------|-----|-------------|--------------------|
| 11 | 826 | 100.0 | 155 | 19 AAV05456 | Fibronectin recept |
| 12 | 826 | 100.0 | 155 | 19 AAW75712 | Fibroblast growth |
| 13 | 826 | 100.0 | 155 | 19 AAW71379 | 18 kDa form of fib |
| 14 | 826 | 100.0 | 155 | 19 AAW53023 | Fibroblast growth |
| 15 | 826 | 100.0 | 155 | 20 AAW9380 | 18 kD isoform of h |
| 16 | 826 | 100.0 | 155 | 21 AAB10298 | Fibroblast growth |
| 17 | 826 | 100.0 | 155 | 21 AAY96873 | Human fibroblast g |
| 18 | 826 | 100.0 | 155 | 21 AAY96893 | Human fibroblast g |
| 19 | 826 | 100.0 | 155 | 21 AAY90411 | Human fibroblast g |
| 20 | 826 | 100.0 | 155 | 21 AAY90448 | Human FGF-2 (bFGF) |
| 21 | 826 | 100.0 | 155 | 21 AAY32334 | Human fibroblast g |
| 22 | 826 | 100.0 | 155 | 22 AAG65648 | Human fibroblast g |
| 23 | 826 | 100.0 | 155 | 22 AAE11976 | Human fibroblast g |
| 24 | 826 | 100.0 | 155 | 22 AAB85813 | Human fibroblast g |
| 25 | 826 | 100.0 | 155 | 22 AAB99918 | Human FGF-2 protei |
| 26 | 826 | 100.0 | 155 | 22 AAG64317 | Human FGF-2 protei |
| 27 | 826 | 100.0 | 155 | 22 AAG64847 | Heart muscle cell |
| 28 | 826 | 100.0 | 155 | 22 AAB84597 | Amino acid sequenc |
| 29 | 826 | 100.0 | 155 | 22 AAY72909 | Truncated form of |
| 30 | 826 | 100.0 | 155 | 22 AAB61662 | FGF2 protein. Hom |
| 31 | 826 | 100.0 | 155 | 22 AAB50274 | Human basic fibrob |
| 32 | 826 | 100.0 | 155 | 23 AAB83825 | Human bFGF related |
| 33 | 826 | 100.0 | 155 | 23 AAE21685 | Human fibroblast g |
| 34 | 826 | 100.0 | 155 | 23 AAE18807 | Human FGF-2 protei |
| 35 | 826 | 100.0 | 155 | 23 AAU12081 | Human 155 amino ac |
| 36 | 826 | 100.0 | 155 | 23 AAU11111 | Human fibroblast g |
| 37 | 826 | 100.0 | 157 | 8 AAP71085 | Sequence of human |
| 38 | 826 | 100.0 | 158 | 18 AAW31664 | Leaderless protein |
| 39 | 826 | 100.0 | 158 | 22 AAU08594 | Human basic fibrob |
| 40 | 826 | 100.0 | 158 | 22 AAG78316 | Human basic fibrob |
| 41 | 826 | 100.0 | 158 | 22 AAU04006 | Human fibroblast g |
| 42 | 826 | 100.0 | 165 | 11 AAR05787 | Human bFGF encoded |
| 43 | 826 | 100.0 | 210 | 11 AAR06885 | Recombinant basic |
| 44 | 826 | 100.0 | 210 | 11 AAB60695 | Human basic fibrob |
| 45 | 826 | 100.0 | 210 | 22 AAB50299 | Human fibroblast g |

ALIGNMENTS

| | | |
|----------|--|----------------------------|
| RESULT 1 | AA70301 | standard; Protein; 155 AA. |
| XX | AA70301; | |
| XX | 05-JUN-1991 (first entry) | |
| XX | Sequence of human basic fibroblast growth factor (bFGF). | |
| XX | Fibroblast growth promoter; mesoderm cell growth promoter; | |
| XX | wound healing. | |
| XX | Homo sapiens. | |
| XX | Key | Location/Qualifiers |
| XX | Peptide | 1..9 |
| XX | Protein | 10..155 |
| XX | | /note="claimed" |
| XX | EP237966-A. | |
| XX | 23-SEP-1987. | |
| XX | 12-MAR-1987. | 87EP-0103601. |
| XX | 29-SEP-1986. | 86UP-0231428. |
| XX | 14-MAR-1986. | 86UP-0057919. |
| XX | 09-APR-1986. | 86UP-0082699. |
| XX | 09-OCT-1986. | 86UP-0241053. |
| XX | (TAKE) TAKEDA CHEMICAL IND KK. | |

PI Kurokawa T, Sasada R, Iwane M, Igarashi K;
 XX MPI; 1987-265363/38.
 DR N-PSDB; AAN70494.
 XX
 XX Human basic fibroblast growth factor - produced by recombinant
 PT DNA techniques, useful for healing wounds, prophylaxis,
 PT thrombosis and arteriosclerosis treatment, etc.
 XX
 PS Disclosure; Fig 1; 38pp; English.
 XX
 CC hbFGF is produced using cDNA prep'd from RNA isolated from W138 or
 CC IMR90 human fibroblasts. hbFGF promotes growth of fibroblasts and
 CC other mesoderm-derived cells and is useful for promoting healing of
 CC wounds (eg burns), for prophylaxis and treatment of thrombosis and
 CC arteriosclerosis, and as a promoter for cell culture.
 XX
 SQ Sequence 155 AA;
 Query Match 100.0%; Score 826; DB 8; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLKCKNGGFELRHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLKCKNGGFELRHPDGRVDGVRKSDPHI 60
 QY 61 KLOLQAEERGVSVIKVCANRYLAMKEDGRLASKCVTDCFFPERLESNNNTYRSRKY 120
 DB 61 KLOLQAEERGVSVIKVCANRYLAMKEDGRLASKCVTDCFFPERLESNNNTYRSRKY 120
 QY 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMGAKS 155
 DB 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMGAKS 155
 RESULT 2
 AAP94038
 ID AAP94038 standard; protein; 155 AA.
 XX
 AC AAP94038;
 XX
 DT 25-JUN-1990 (first entry)
 XX
 DE Human basic fibroblast growth factor.
 KW Basic fibroblast growth factor; pUC9-TSFI1; pUC9delH3-PTSF-3.
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 78 /label=Cys
 FT /note="replaced by Ser or Ala"
 FT Misc-difference 96 /label=Cys
 FT /note="replaced by Ser or Ala"
 FT Misc-difference 128 /label=Lys
 FT /note="replaced by Ser or Glu"
 FT Misc-difference 129 /label=Arg
 FT /note="replaced by Thr"
 FT Misc-difference 138 /label=Lys
 FT /note="replaced by Ser"
 FT Domain 128..138 /label="replaced by Ser"
 FT /label=heparin-binding domain
 XX EP298723-A.
 XX
 XX
 XX
 PD 11-JAN-1989.
 XX

PF 06-JUL-1988; 88EP-0306158.
 XX
 PR 07-JUL-1987; 87US-0070797.
 XX
 PA (BIOT-) BIOTECHN RES ASSOC.
 XX
 PI Fiddes JC, Abraham JA, Protter A;
 XX
 DR MPI; 1989-009785/02.
 DR N-PSDB; AAN93087.
 XX
 XX Recombinant DNA encoding new fibroblast growth factor
 PT analogues - useful eg for accelerating wound healing and
 PT to control neovascularisation.
 XX
 PS Disclosure; d 1-2; 44pp; English.
 XX
 CC DNA encoding the sequence may be mutated to encode an analogue, of human
 CC basic fibroblast growth factor (bFGF) bFGF-C78/96S, which has reduced
 CC affinity for heparin. One or more positively-charged AAs in the heparin-
 CC binding domain (AAs 128-138) are replaced by neutral or negatively-
 CC charged residues as indicated in the feature table. A recombinant vector
 CC (pUC9-TSFI1 or pUC9delH3-PTSF-3) conng. the mutated DNA can be used to
 CC transform bacterial or mammalian host cells for prodn. of the analogue.
 XX
 SQ Sequence 155 AA;
 Query Match 100.0%; Score 826; DB 10; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLKCKNGGFELRHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLKCKNGGFELRHPDGRVDGVRKSDPHI 60
 QY 61 KLOLQAEERGVSVIKVCANRYLAMKEDGRLASKCVTDCFFPERLESNNNTYRSRKY 120
 DB 61 KLOLQAEERGVSVIKVCANRYLAMKEDGRLASKCVTDCFFPERLESNNNTYRSRKY 120
 QY 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMGAKS 155
 DB 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMGAKS 155
 RESULT 3
 AAR05314
 ID AAR05314 standard; protein; 155 AA.
 XX
 AC AAR05314;
 XX
 DT 10-OCT-1990 (first entry)
 XX
 DE Human basic fibroblast growth factor (FGF).
 KW Fibroblast growth factor; FGF; yeast; ischaemia; ds.
 OS Synthetic.
 XX
 XX WO9005184-A.
 XX
 PN 17-MAY-1990.
 PD
 PF 03-NOV-1989; 89WO-0004821.
 XX
 PR 04-NOV-1988; 88US-0267408.
 XX
 PA (CHIR-) CHIRON CORP.
 XX
 PI Barr PJ;
 XX
 XX MPI; 1990-178825/23.
 DR N-PSDB; AAO04716.
 DR

XX Yeast prodn. of human basic and acidic fibroblast growth factor -
 PT with acetylated amino-terminal, useful eg. for creating cell
 PT senescence, neuronal regression and cell death.
 XX
 PS Disclosure; ; p: English.
 CC FGF have applications such as in vivo nerve regeneration, wound
 CC repair ischaemia and corneal repair. They may also have therapeutic
 CC uses in the CNS and PNS in treatment of cell death and neuronal
 CC regression.
 CC
 SQ Sequence 155 AA;
 Query Match 100.0%; Score 826; DB 11; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFRLRHDPGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFRLRHDPGRVDGVRKSDPHI 60
 QY 61 KLOQAEERGVSTIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 DB 61 KLOQAEERGVSTIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 QY 121 TSMVVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TSMVVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 4
 AAR22232
 ID AAR22232 standard; protein; 155 AA.
 XX
 AC AAR22232;
 XX
 DT 23-JUN-1992 (first entry)
 XX
 DE bFGF truncated at its N-terminus.
 XX
 KM Basic fibroblast growth factor; adduct; heparin; heparan sulphate;
 KM pepsin A; cathepsin D; wounds; burns.
 XX
 OS Synthetic.
 XX
 PN WO9202539-A.
 XX
 PD 20-FEB-1992.
 XX
 PF 30-JUL-1991; 91WO-EP01428.
 XX
 PR 02-AUG-1990; 90GB-0017008.
 XX
 PA (FARM) FARMITALIA C ERBA SRL.
 XX
 PI Monsan P, Paul F, Betbeder D, Sarmientos P;
 XX WPI, 1992-080021/10.
 XX
 DR WPI, 1992-080021/10.
 XX
 PT Prep'n. of basic fibroblast growth factor - by forming adduct with
 PT heparin or heparan sulphate and cleaning with pepsin A or
 PT cathepsin D
 XX
 PS Claim 4; Page 27; 36pp; English.
 CC The peptide sequence was deduced from the synthetic DNA sequence
 CC prep'd. as described in EP-363675. E. coli cells transformed with the
 CC synthetic DNA were lysed and the supernatant purified, giving a
 CC 50:50 mixture of a 154 residue bFGF (2-155) having the amino acid
 CC sequence of the 155 residue form (Abraham et al, Science, 233, 545-
 CC 548, 1986) shown here but without the N-terminal Met; and a 153
 CC residue bFGF (3-155). An adduct of bFGF formed with heparin or

CC heparan sulphate contg. the bFGF 9-10 Leu-Pro bond can be cleaved
 CC with pepsin A or cathepsin D to cleave this bond and release a
 CC peptide with the N-terminus be deleted up to and including residue
 CC 9, sequentially. This cleavage method can be used to obtain a pure
 CC form of the 146 amino acid bFGF (10-155) bFGF. The prod. can be used
 CC to treat wounds and burns.
 CC See also AAR22233.
 CC
 SQ Sequence 155 AA;
 Query Match 100.0%; Score 826; DB 13; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFRLRHDPGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFRLRHDPGRVDGVRKSDPHI 60
 QY 61 KLOQAEERGVSTIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 DB 61 KLOQAEERGVSTIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
 QY 121 TSMVVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TSMVVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 5
 AAR40159
 ID AAR40159 standard; peptide; 155 AA.
 XX
 AC AAR40159;
 XX
 DT 07-FEB-1994 (first entry)
 XX
 DE Human bFGF peptide fragment #1.
 XX
 KM Human; fibronectin; FN; fibroblast cell growth factor; FGF;
 KM fusion; cell adhesion; cell growth; anti-aging; cosmetics;
 KM wound healing; surgery.
 XX
 OS Homo sapiens.
 XX
 PN JPO5178897-A.
 XX
 PD 20-JUL-1993.
 XX
 PF 05-MAR-1992; 92JP-0083220.
 XX
 PR 14-OCT-1991; 91JP-0291959.
 XX
 PA (TAKI) TAKARA SHUZO CO LTD.
 XX
 DR WPI, 1993-261656/33.
 DR N-P8DB; AAQ46943.
 XX
 PT Synthetic functional polypeptide to promote wound healing, etc.
 PT contg. cell adhesion polypeptide from fibronectin and fibroblast
 PT growth factor polypeptide, opt. linked by spacer
 XX
 PS Disclosure; Page 7; 13pp; Japanese.
 CC The sequences given in AAR40158-63 represent human fibronectin (FN)
 CC and fibroblast cell growth factor (FGF) fragments which were used in
 CC the production of fusion polypeptides which are able to stimulate
 CC cell adhesion and cell growth. These fusion peptides may be used
 CC for anti-aging cosmetics and in wound healing after surgery.
 CC
 SQ Sequence 155 AA;
 Query Match 100.0%; Score 826; DB 14; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCCKNGGFFLRIHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCCKNGGFFLRIHPDGRVDGVRKSDPHI 60
 QY 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRKY 120
 DB 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRKY 120
 QY 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 6
 AAR80777
 ID AAR80777 standard; Protein; 155 AA.
 AC AAR80777;
 XX
 DT 13-MAY-1996 (first entry)
 DE Fibroblast growth factor 2, FGF-2.
 XX
 KM Conjugate; fibroblast growth factor; FGF; cytotoxin; saporin; eye;
 KM cell proliferation; regulation; pterygia; corneal clouding; cancer;
 KM psoriasis; rheumatoid arthritis.
 XX
 OS Homo sapiens.
 XX
 PN WO9524928-A2.
 XX
 PD 21-SEP-1995.
 PF 15-MAR-1995; 95WO-US03448.
 XX
 PR 15-MAR-1994; 94US-0213447.
 PR 15-MAR-1994; 94US-0213446.
 PA (PRIZ-) PRIZM PHARM INC.
 PI Baird JA, Houston LL, Nova MP, Sosnowski BA;
 XX
 DR WPI; 1995-336820/43.
 PT New conjugates of growth factor receptor ligand and targeted agent
 PT - partic. DNA or cytotoxin, used to control cell proliferation in
 PT the eye, e.g. to prevent growth of pterygia and corneal clouding
 XX
 PS Claim 33; Page 141; 204pp; English.
 XX
 CC AAR80776-84 are fibroblast growth factors (FGF) FGF-1 to FGF-9
 CC respectively. DNA encoding these fibroblast growth factors can be
 CC used to create an FGF/saporin fusion protein. DNA encoding such fusion
 CC proteins are useful for targeting saporin (a cytotoxin) to a cell
 CC carrying the FGF receptor. Targeted agents (TA) other than saporin
 CC which may be used include in partic. DNA encoding a therapeutic protein,
 CC antisense DNA or other cytotoxic agent. The linker sequence within the
 CC fusion protein may increase serum stability or intracellular
 CC availability of the TA. The conjugates of the invention are used to
 CC inhibit cell proliferation in cells carrying the particular growth
 CC factor receptor; also when TA is DNA it can be used to deliver this
 CC to cells (for gene therapy). A specific application is to prevent
 CC excessive proliferation of epithelial cells, fibroblasts and
 CC keratinocytes in the anterior eye after surgery, partic. to prevent
 CC recurrence of pterygia after surgical removal, closure of
 CC treblectomy after glaucoma surgery and corneal clouding after
 CC excimer laser treatment. Other conditions which may be treated include
 CC tumors, restenosis, psoriasis, Dupuytren's contracture, diabetic
 CC complications, Kaposi's sarcoma and rheumatoid arthritis.
 CC
 XX Sequence 155 AA;
 SQ

Query Match 100.0%; Score 826; DB 16; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCCKNGGFFLRIHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCCKNGGFFLRIHPDGRVDGVRKSDPHI 60
 QY 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRKY 120
 DB 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRKY 120
 QY 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 7
 AAR70204
 ID AAR70204 standard; Protein; 155 AA.
 AC AAR70204;
 XX
 DT 21-SEP-1995 (first entry)
 DE Human bFGF.
 XX
 KM Basic fibroblast growth factor; bFGF; blood-brain barrier;
 KM neuronal precursor cell; neurological agent.
 XX
 OS Homo sapiens.
 XX
 PN WO9507092-A.
 XX
 PD 16-MAR-1995.
 PF 11-AUG-1994; 94WO-US09155.
 XX
 PR 10-SEP-1993; 93US-0118822.
 PR 22-DEC-1993; 93US-0171297.
 PA (UYNE-) UNIV NEW JERSEY.
 XX
 PI Black IB, Diccoco-Bloom E;
 XX
 DR WPI; 1995-123234/16.
 DR N-PSDB; AA083522.
 XX
 PT New conjugates for crossing the blood brain barrier - comprising
 PT a neurological agent linked to a transport factor comprising at
 PT least a portion of a growth factor
 XX
 PS Disclosure; Fig.1; 53pp; English.
 XX
 CC Growth and/or proliferation of neuronal precursor cells in an animal
 CC is obtained by admin. of a proliferation factor comprising at least
 CC a portion of a growth factor, e.g. human basic fibroblast growth
 CC factor, whose sequence is given in AAR70204 and gene in AA083522.
 CC
 XX Sequence 155 AA;
 SQ
 Query Match 100.0%; Score 826; DB 16; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCCKNGGFFLRIHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITTLPALPEDGSGAAPPFGHFKDPKRLYCCKNGGFFLRIHPDGRVDGVRKSDPHI 60
 QY 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRKY 120
 DB 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRKY 120

QY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 8

AA70823
 ID AAR70823 standard; protein; 155 AA.

AC AAR70823;

DT 01-SEP-1995 (first entry)

DE FGF-2.

KW FGF-2; fibroblast growth factor; cytotoxic conjugate; fusion protein; saporin; cytoskeletal; tumor; diabetes; rheumatoid arthritis.

OS Homo sapiens.

XX W09503831-A.

XX W09503831-A.

XX 09-FEB-1995.

XX 27-JUL-1994; 94WO-US08511.

XX 02-AUG-1993; 93US-0099924.

XX 29-OCT-1993; 93US-0145829.

XX (PRIZ-) PRIZM PHARM INC.

XX (WHIT-) WHITTIER INST DIABETES & ENDOCRINOLOGY.

XX Baird AJ, Iappi DA, Sosnowski BA;

XX WPI; 1995-082038/11.

XX New monogenic preparations of cytotoxic conjugates and DNA -

XX contain fibroblast growth factors and cytotoxic agents for

XX treating FGF conditions such as tumours, diabetes and rheumatoid

XX arthritis.

XX Disclosure; Page 109-110; 128pp; English.

XX Novel fusion proteins comprise FGF linked to saporin. FGF-1 to -9

XX may be used, pref. mutants in which at least 1 Cys residue is

XX replaced by conservative Ser substitutions. The fusion proteins

XX are potent cytotoxic agents to cells bearing the FGF receptor.

XX Sequence 155 AA;

XX Query Match 100.0%; Score 826; DB 16; Length 155;

XX Best Local Similarity 100.0%; Pred. No. 3.5e-80;

XX Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPBDGSGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60

DB 1 MAAGSITTLPALPBDGSGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60

QY 61 KLQDAEERGVVISIKGVANRYLAMKEDGRLLASCVTDECFEFLRSNNNTYRSRY 120

DB 61 KLQDAEERGVVISIKGVANRYLAMKEDGRLLASCVTDECFEFLRSNNNTYRSRY 120

QY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DT 23-FEB-1998 (first entry)

XX Human fibronectin amino-terminal oligopeptide.

DE Amino-terminal; human fibronectin; target cell;

XX transfection; retroviral vector; gene therapy; cancer;

XX viral disease; acquired immunodeficiency syndrome; AIDS.

XX Homo sapiens.

XX W09718318-A1.

XX 22-MAY-1997.

XX 07-NOV-1996; 96WO-JP03254.

XX 08-MAR-1996; 96JP-0051847.

XX 13-NOV-1995; 95JP-0294382.

XX (TAKI) TAKARA SHUZO CO LTD.

XX Asada K, Hashino K, Kato I, Koyama N, Uemori T;

XX Ueno T;

XX WPI; 1997-289294/26.

XX Method for increasing efficacy of gene transfer to target cell using

XX retrovirus - by infection of the target cell in the presence of a

XX substance which binds to the virus and a substance which binds to

XX the target cell

XX Claim 41; Pages 93-94; 194pp; Japanese.

XX The present sequence is a human fibronectin amino-terminal

XX oligopeptide, which was used in the development of a novel method

XX for increasing the efficiency of gene introduction into a target

XX cell using a retroviral vector. The method comprises carrying out

XX viral infection of the target cell in the presence of a retrovirus

XX and target cell binding substance or substances. The method can be

XX used to effectively introduce genes into target cells for the gene

XX therapy of cancer and viral diseases, e.g. AIDS.

XX Sequence 155 AA;

XX Query Match 100.0%; Score 826; DB 18; Length 155;

XX Best Local Similarity 100.0%; Pred. No. 3.5e-80;

XX Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPBDGSGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60

DB 1 MAAGSITTLPALPBDGSGAPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60

QY 61 KLQDAEERGVVISIKGVANRYLAMKEDGRLLASCVTDECFEFLRSNNNTYRSRY 120

DB 61 KLQDAEERGVVISIKGVANRYLAMKEDGRLLASCVTDECFEFLRSNNNTYRSRY 120

QY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 10

AAW19595
 ID AAW19595 standard; Protein; 155 AA.

AC AAW19595;

DT 18-SEP-1997 (first entry)

XX Biologically active recombinant basic fibroblast growth factor.

XX FGF; fibroblast growth factor; basic; acidic; wound healing;

XX neurodegenerative disease; Parkinson's; Alzheimer's disease;

KW bone fracture; biologically active; embolism.
 XX Homo sapiens.
 XX Key Location/Qualifiers
 FT Peptide 1..9
 FT /label= sig_peptide
 FT Protein 10..155
 FT /label= mat_protein
 PN US5604293-A.
 PD 18-FEB-1997.
 XX 12-SEP-1985; 85US-0775521.
 PF 15-MAY-1987; 87US-0050706.
 PR 12-SEP-1985; 85US-0775521.
 PR 16-DEC-1985; 85US-0809163.
 PR 30-MAY-1986; 86US-0869382.
 PR 30-MAR-1992; 92US-0860688.
 PR 01-APR-1994; 94US-0221462.
 XX (SCIO-) SCIOS INC.
 PA Abraham JA, Fiddes JC;
 PI WPI, 1997-234676/21.
 DR N-PSDB; AAT71231.
 XX New high purity, recombinant human basic fibroblast growth factor -
 PT for promoting wound healing and treating neurodegenerative
 PT diseases, suitable for production on large scale
 PS Claim 2; Fig 4; 34pp; English.
 XX AAM19595 is a biologically active recombinant human basic fibroblast
 CC growth factor (bFGF). The protein is free from all infectious
 CC impurities, substances that normally accompany it and from
 CC post-translational modification of Cys residues of native human bFGF.
 CC Recombinant bFGF is used to promote healing of wounds, bone fractures,
 CC damaged myocardial tissue etc. and, since it increases neuronal survival
 CC and promotes neurite outgrowth, may also be used in treatment of
 CC neurological disorders such as Alzheimer's and Parkinson's diseases. bFGF
 CC may also be used for detection of specific inhibitors for treatment of
 CC cell cultures in vitro before transplant and for inducing release of
 CC tissue plasminogen activator or collagenase, e.g. for treatment of a
 CC chronic tendency to form embolism. Recombinant bFGF can be produced on a
 CC large scale.
 XX Sequence 155 AA;
 SQ
 Query Match 100.0%; Score 826; DB 18; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITLPLALPEDGSGAPPGHFKDPKRLYCKNGGFRLIHDPGRVDGVRKSDPHI 60
 DB 1 MAAGSITLPLALPEDGSGAPPGHFKDPKRLYCKNGGFRLIHDPGRVDGVRKSDPHI 60
 QY 61 KLQLOAERGVVSIKGVANRYLAKMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 DB 61 KLQLOAERGVVSIKGVANRYLAKMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 QY 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 11
 AAY05456
 ID AAY05456 standard; protein; 155 AA.
 XX

AC AAY05456;
 XX 07-JUL-1999 (first entry)
 DT 07-JUL-1999 (first entry)
 DE Fibronectin receptor targeting HIV strain CH-271.
 DE Fibronectin receptor; HIV; infection; therapy.
 KW Unidentified.
 XX JPI0029952-A.
 PN 03-FEB-1998.
 PD 16-JUL-1996; 96JP-0185893.
 PF 16-JUL-1996; 96JP-0185893.
 PR 16-JUL-1996; 96JP-0185893.
 PR (TAKI) TAKARA SHUZO CO LTD.
 PA WPI, 1998-163674/15.
 XX Control of human immunodeficiency virus infection - using
 PT composition comprising replication defective HIV vector
 XX Disclosure; Page 17; 24pp; Japanese.
 PS This sequence represents a fibronectin receptor that can be used in
 CC the method of the invention. The method is for the control of human
 CC immunodeficiency virus (HIV) infection using a composition which
 CC comprises a functional substance which participates in the infection of
 CC HIV. The method is used to control HIV-infection.
 XX Sequence 155 AA;
 SQ
 Query Match 100.0%; Score 826; DB 19; Length 155;
 Best Local Similarity 100.0%; Pred. No. 3.5e-80;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAAGSITLPLALPEDGSGAPPGHFKDPKRLYCKNGGFRLIHDPGRVDGVRKSDPHI 60
 DB 1 MAAGSITLPLALPEDGSGAPPGHFKDPKRLYCKNGGFRLIHDPGRVDGVRKSDPHI 60
 QY 61 KLQLOAERGVVSIKGVANRYLAKMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 DB 61 KLQLOAERGVVSIKGVANRYLAKMKEDGRLASKCVTDECFPERLESNNYNTYRSRY 120
 QY 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
 RESULT 12
 AAM75712
 ID AAM75712 standard; Protein; 155 AA.
 XX
 AC AAM75712;
 XX 07-DEC-1998 (first entry)
 DT 07-DEC-1998 (first entry)
 DE Fibroblast growth factor-2.
 DE Fibroblast growth factor-2; bFGF-2; basic fibroblast growth factor;
 KW bFGF; muten; protein engineering; heparin; thrombosis;
 KW thrombocytopenia; ophthalmic disorder; human; therapy.
 XX Homo sapiens.
 OS Homo sapiens.
 XX Key Location/Qualifiers
 FT Peptide 1..9
 FT /label= sig_peptide
 FT Protein /note= "amino acid residues -9 to -1"
 FT 10..155

FT /label= Mat protein
FT /note= "amino acid residues +1 to +145"
FT Misc-difference 95 /note= "Phe-95 is replaced by another amino acid
FT acid (Claim 3), preferably Ala, Phe, Ser,
FT Gly, Met, Leu or Tyr, especially Ala, Gly
FT or Ser"
FT Misc-difference 96 /note= "Glu-96 may be replaced by another amino
FT acid (Claim 7), preferably Ala, Gly or Ser"
FT Misc-difference 101 /note= "Asn-101 may be replaced by another amino
FT acid (Claim 2), preferably Ala, Phe, Ser,
FT Gly, Met, Leu or Tyr, especially Ala, Gly
FT or Ser"
FT Misc-difference 104 /note= "Asn-104 may be replaced by another amino
FT acid (Claim 1), preferably Ala, Phe, Ser,
FT Gly, Met, Leu or Tyr, especially Ala, Gly
FT or Ser"
XX WO9839436-A2.
XX 11-SEP-1998.
XX 03-MAR-1998; 98WO-JP00878.
XX 03-MAR-1997; 97US-0040785.
XX (EISA) EISAI CO LTD.
XX Kalyanaraman R, Kawai T, Zhu H;
XX MPI; 1998-495843/42.
XX N-PSDB; AAV47647.
XX Fibroblast growth factor mutein and DNA - having reduced receptor
XX binding and able to bind heparin, useful for treating and regulating
XX heparin-related disorders e.g. thrombosis
XX Disclosure: Page 53; 71pp; English.
XX This is the amino acid sequence of fibroblast growth factor-2
XX (FGF-2), or basic fibroblast growth factor (bFGF). Claimed DNA
XX molecules of the invention encode FGF mutein polypeptides (see
XX AA75711-20) that show reduced FGF receptor binding activity but
XX which retain the ability to bind heparin. For FGF-2, amino acid
XX residues 95, 101 or 104 are preferably replaced by other amino acid
XX residues, with an optional further replacement of the Glu-96
XX residue. The mutein may be further modified by replacement of the
XX Cys-78 and Cys-96 residues to reduce aggregation. The mutein
XX is obtained by site-specific or site-directed mutagenesis of FGF-2
XX DNA, incorporation of the mutated DNA into a vector and expression
XX in host cells. The FGF muteins are used to treat heparin-related
XX disorders, such as excessive bleeding induced by heparin,
XX ophthalmic disorders and heparin-associated thrombocytopenia and
XX thrombosis. They may also be used for drug design, especially
XX FGF-2 antagonists.
SQ Sequence 155 AA;

Query Match 100.0%; Score 826; DB 19; Length 155;
Best Local Similarity 100.0%; Pred. No. 3.5e-80;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAPPPGHFKDPRKRLYCKXGFFLRHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAPPPGHFKDPRKRLYCKXGFFLRHPDGRVDGVREKSDPHI 60
QY 61 KIQLOAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
DB 61 KIQLOAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120

OY 121 TSWYVALKRTGYKLGSKTGPCKAIFLPLMSAKS 155
DB 121 TSWYVALKRTGYKLGSKTGPCKAIFLPLMSAKS 155
RESULT 13
ID AAW71379 standard; Protein: 155 AA.
XX AAW71379;
XX 04-DEC-1998 (first entry)
XX 18 kDa form of fibroblast growth factor-2 (FGF-2).
XX Fibroblast growth factor-2; FGF-2; leaderless protein; inhibition;
XX export; angiogenesis; restenosis; treatment; tumour; inflammation;
XX cell proliferation; diabetes; retinopathy; infection;
XX polycystic kidney disease; atherosclerosis.
XX Homo sapiens.
XX WO9837880-A1.
XX 03-SEP-1998.
XX 25-FEB-1998; 98WO-US03689.
XX 26-FEB-1997; 97US-0807014.
XX (CIBL-) CIBLEX CORP.
XX Baird A, Florkiewicz RZ;
XX MPI; 1998-495377/42.
XX N-PSDB; AAV60340.
XX Inhibiting export of leaderless protein with agent that inhibits
XX binding to transporter protein - especially for treating
XX angiogenesis and restenosis by preventing export of fibroblast
XX growth factor, also methods for identifying leaderless proteins and
XX their transporters
XX Claim 2; Pages 55-56; 116pp; English.
XX The present sequence represents 18 kDa form of fibroblast growth factor-2
XX (FGF-2), a leaderless protein. A leaderless protein refers to a protein
XX that is found in an extracellular environment, but lacks a canonical
XX leader sequence. The specification describes a method for inhibiting
XX export of a leaderless protein from a cell. The method comprises treating
XX the cell with an agent that inhibits binding between the leaderless
XX protein and a transport molecule. Treatment with the inhibiting agent
XX is specifically used to treat angiogenesis and restenosis, i.e. where
XX expression of FGF-2 is inhibited, and the agent is applied to endothelial
XX or smooth muscle cells. Other applications are treatment of tumours
XX (melanoma, teratocarcinoma, ovarian carcinoma, bladder cancer and
XX neuroblastoma), inflammation, cell proliferation, complications of
XX diabetes (e.g. retinopathy), viral, bacterial or fungal infections,
XX polycystic kidney disease and atherosclerosis.
SQ Sequence 155 AA;

Query Match 100.0%; Score 826; DB 19; Length 155;
Best Local Similarity 100.0%; Pred. No. 3.5e-80;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAPPPGHFKDPRKRLYCKXGFFLRHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAPPPGHFKDPRKRLYCKXGFFLRHPDGRVDGVREKSDPHI 60
QY 61 KIQLOAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
DB 61 KIQLOAEEGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120

OY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 14

AAW53023 standard; Protein; 155 AA.

AAW53023;

14-AUG-1998 (first entry)

Fibroblast growth factor protein 2.

FGF; cell growth, survival, differentiation; central nervous system; peripheral nervous tissue; treatment; diagnosis; cell culture.

Mammalian.

MO9808864-A1.

05-MAR-1998.

27-AUG-1997; 97WO-US15237.

30-AUG-1996; 96US-0705245.

(UYJO) UNIV JOHNS HOPKINS SCHOOL MEDICINE.

Nachans J, Smallwood PM;

WPI; 1998-179380/16.

New fibroblast growth factor homologous factors - useful for, e.g.

developing products for diagnosis and treatment of conditions

involving neuro-degenerative and neoplastic disorders

Disclosure; Page 51-52, 94pp; English.

Fibroblast growth factor (FGF) proteins (AAW53022-W53024 and

AAW53029-W53033) are members of the fibroblast growth factor family and

have homology to fibroblast growth factor homologous factor (FGF)

proteins. The FGF proteins (FGF 1-4) are involved in regulating the

growth, survival, and differentiation of cells in the central nervous

system, as well as cells in peripheral nervous tissues. The proteins can

therefore be used for treating and diagnosing conditions involving the

nervous system. FGFs can also be used in methods for maintaining the

cultured cells or tissues or to promote neuron growth in vitro.

Sequence 155 AA;

Query Match 100.0%; Score 826; DB 19; Length 155;

Best Local Similarity 100.0%; Pred. No. 3.5e-80;

Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MAAGSITTLPALPEDGSGAFPPGHPKDPKRLYCKNGGFLLRIHPDGRVDGVEKSDPHI 60

DB 1 MAAGSITTLPALPEDGSGAFPPGHPKDPKRLYCKNGGFLLRIHPDGRVDGVEKSDPHI 60

OY 61 KLOLAEEERGVSISIKVCANRYLAMKEDEGRLLASKCVTDECFERLESNNNTYRSRY 120

DB 61 KLOLAEEERGVSISIKVCANRYLAMKEDEGRLLASKCVTDECFERLESNNNTYRSRY 120

OY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

AAW99380;
21-MAY-1999 (first entry)

18 kD isoform of human fibroblast growth factor 2.

Human; fibroblast growth factor; translational start site; isoform;
inhibition; nuclear localisation; nuclear trafficking component;
proliferation; inflammation; tumour growth; angiogenesis.

Homo sapiens.

WO9903489-A2.

28-JAN-1999.

20-JUL-1998; 98WO-US14997.

21-JUL-1997; 97US-0897924.

(CIBL-) CIBLEX CORP.

Florkiewicz RZ;

WPI; 1999-131860/11.

N-PSDB; AAX25738.

Inhibiting nuclear localisation of proteins - used for controlling

cellular functions, e.g. undesired proliferation and inflammation,

particularly tumours, and treating viral infection

Disclosure; Page 42; 53pp; English.

This sequence represents the 18 kD isoform of the human fibroblast growth

factor 2 (FGF2). The invention relates to inhibiting nuclear localisation

of a nuclear protein in a cell, by administering an inhibitor of nuclear

trafficking components. Interrupting the interaction of trafficking

components and nuclear proteins may be used in a variety of applications,

including inhibiting nuclear localisation, modulating protein trafficking

of nuclear proteins such as FGF (in vitro or in vivo), identifying

CC further trafficking components, and treating a variety of conditions

associated with nuclear trafficking. The 24, 23 and 22 kD isoforms

of FGF2 are nuclear proteins whereas the 18 kD isoform is not but is

secreted. Inhibiting the nuclear transport of FGF-2 allows the control

of undesired proliferation and inflammation, particularly tumour growth.

Increasing export of FGF can promote angiogenesis. In addition, use of

CC inhibitors of nuclear localisation can limit or eradicate viral (e.g. HIV

or EBV) infections.

Sequence 155 AA;

Query Match 100.0%; Score 826; DB 20; Length 155;

Best Local Similarity 100.0%; Pred. No. 3.5e-80;

Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MAAGSITTLPALPEDGSGAFPPGHPKDPKRLYCKNGGFLLRIHPDGRVDGVEKSDPHI 60

DB 1 MAAGSITTLPALPEDGSGAFPPGHPKDPKRLYCKNGGFLLRIHPDGRVDGVEKSDPHI 60

OY 61 KLOLAEEERGVSISIKVCANRYLAMKEDEGRLLASKCVTDECFERLESNNNTYRSRY 120

DB 61 KLOLAEEERGVSISIKVCANRYLAMKEDEGRLLASKCVTDECFERLESNNNTYRSRY 120

OY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

Search completed: December 16, 2002, 17:55:36

Job time : 33 secs

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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:55:41 ; Search time 11.5 Seconds
(without alignments)
396.570 Million cell updates/sec

Title: 'US-09-886-856-8

Perfect score: 826
Sequence: 1 MAAGITLPLPDPDGS...GSKTGPQKALFLMSAKS 155

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422922 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents AA:*
1: /cgn2_6/prodata/1/1aa/5A_COMB.pep:*
2: /cgn2_6/prodata/1/1aa/5B_COMB.pep:*
3: /cgn2_6/prodata/1/1aa/6A_COMB.pep:*
4: /cgn2_6/prodata/1/1aa/6B_COMB.pep:*
5: /cgn2_6/prodata/1/1aa/PCTUS_COMB.pep:*
6: /cgn2_6/prodata/1/1aa/backfil1a1.pep:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|---------------------|--------------------|
| 1 | 826 | 100.0 | 155 | 1 US-07-959-369-6 | Sequence 6, Appl |
| 2 | 826 | 100.0 | 155 | 1 US-07-842-177A-1 | Sequence 10, Appl |
| 3 | 826 | 100.0 | 155 | 1 US-08-439-725A-10 | Sequence 10, Appl |
| 4 | 826 | 100.0 | 155 | 1 US-08-325-632-1 | Sequence 1, Appl |
| 5 | 826 | 100.0 | 155 | 1 US-08-462-169B-10 | Sequence 10, Appl |
| 6 | 826 | 100.0 | 155 | 2 US-08-667-471-10 | Sequence 10, Appl |
| 7 | 826 | 100.0 | 155 | 2 US-08-438-439C-14 | Sequence 14, Appl |
| 8 | 826 | 100.0 | 155 | 2 US-08-951-822-28 | Sequence 28, Appl |
| 9 | 826 | 100.0 | 155 | 3 US-09-103-079-10 | Sequence 10, Appl |
| 10 | 826 | 100.0 | 155 | 3 US-08-705-245-6 | Sequence 6, Appl |
| 11 | 826 | 100.0 | 155 | 3 US-08-897-924A-25 | Sequence 25, Appl |
| 12 | 826 | 100.0 | 155 | 3 US-08-718-904-11 | Sequence 11, Appl |
| 13 | 826 | 100.0 | 155 | 3 US-09-023-082A-17 | Sequence 17, Appl |
| 14 | 826 | 100.0 | 155 | 3 US-09-030-613-3 | Sequence 3, Appl |
| 15 | 826 | 100.0 | 155 | 4 US-09-098-628-2 | Sequence 2, Appl |
| 16 | 826 | 100.0 | 155 | 4 US-09-451-905-3 | Sequence 3, Appl |
| 17 | 826 | 100.0 | 155 | 4 US-09-368-951-28 | Sequence 28, Appl |
| 18 | 826 | 100.0 | 155 | 4 US-09-366-009-3 | Sequence 3, Appl |
| 19 | 826 | 100.0 | 155 | 4 US-09-619-213B-99 | Sequence 99, Appl |
| 20 | 826 | 100.0 | 155 | 5 PCT-US91-02186-2 | Sequence 2, Appl |
| 21 | 826 | 100.0 | 155 | 6 5514566-8 | Patent No. 5514566 |
| 22 | 826 | 100.0 | 158 | 2 US-08-599-895-3 | Sequence 3, Appl |
| 23 | 826 | 100.0 | 158 | 3 US-09-211-290-3 | Sequence 3, Appl |
| 24 | 826 | 100.0 | 158 | 3 US-09-332-676-3 | Sequence 3, Appl |
| 25 | 826 | 100.0 | 158 | 4 US-09-220-077C-2 | Sequence 2, Appl |
| 26 | 826 | 100.0 | 158 | 4 US-09-466-036A-3 | Sequence 3, Appl |
| 27 | 826 | 100.0 | 210 | 1 US-08-464-590A-14 | Sequence 14, Appl |

| | | | | | |
|----|-----|-------|-----|---------------------|--------------------|
| 28 | 826 | 100.0 | 210 | 2 US-08-207-412B-9 | Sequence 9, Appl |
| 29 | 826 | 100.0 | 210 | 3 US-09-093-585-14 | Sequence 14, Appl |
| 30 | 826 | 100.0 | 432 | 1 US-07-959-369-8 | Sequence 8, Appl |
| 31 | 826 | 100.0 | 432 | 2 US-08-836-854-20 | Sequence 20, Appl |
| 32 | 826 | 100.0 | 432 | 4 US-09-366-009-4 | Sequence 4, Appl |
| 33 | 823 | 99.6 | 155 | 1 US-07-959-369-7 | Sequence 7, Appl |
| 34 | 823 | 99.6 | 432 | 1 US-07-959-369-9 | Sequence 9, Appl |
| 35 | 821 | 99.4 | 154 | 2 US-08-438-439C-24 | Sequence 24, Appl |
| 36 | 821 | 99.4 | 154 | 3 US-08-325-166-1 | Sequence 1, Appl |
| 37 | 821 | 99.4 | 235 | 1 US-08-078-683A-39 | Sequence 39, Appl |
| 38 | 820 | 99.3 | 457 | 4 US-09-366-009-5 | Sequence 5, Appl |
| 39 | 817 | 98.9 | 153 | 3 US-08-325-186-2 | Sequence 2, Appl |
| 40 | 817 | 98.9 | 154 | 5 PCT-US91-02186-6 | Sequence 6, Appl |
| 41 | 817 | 98.9 | 155 | 1 US-08-023-757-2 | Sequence 2, Appl |
| 42 | 817 | 98.9 | 155 | 1 US-08-177-502-2 | Sequence 2, Appl |
| 43 | 817 | 98.9 | 155 | 4 US-09-240-952-4 | Sequence 4, Appl |
| 44 | 817 | 98.9 | 155 | 5 PCT-US91-02186-4 | Sequence 4, Appl |
| 45 | 817 | 98.9 | 155 | 6 5514566-6 | Patent No. 5514566 |

ALIGNMENTS

RESULT 1
US-07-959-369-6
; Sequence 6, Application US/07959369
; Patent No. 5302701
; GENERAL INFORMATION:
; APPLICANT: Hidetaka HASHI et al.
; TITLE OF INVENTION: No. 5302701el Functional Polypeptide
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Wenderoth, Lind & Ponack
; STREET: 805 Fifteenth Street, N.W., #700
; CITY: Washington
; STATE: D.C.
; COUNTRY: U.S.A.
; ZIP: 20005
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette, 5.25 inch, 500 kb
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: MS-DOS
; SOFTWARE: Wordperfect 5.1
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/959,369
; FILING DATE: 19921013
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Warren M. Cheek, Jr.
; REGISTRATION NUMBER: 33,367
; REFERENCE/DOCKET NUMBER:
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 202-371-8850
; TELEFAX:
; TELEX:
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 155 amino acids
; TYPE: AMINO ACID
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: polypeptide
; HYPOTHEICAL:
; ANTI-SENSE:
; FRAGMENT TYPE:
; ORIGINAL SOURCE:
; ORGANISM:
; STRAIN:
; INDIVIDUAL ISOLATE:
; DEVELOPMENTAL STAGE:

HAPLOTYPE:
TISSUE TYPE:
CELL TYPE:
CELL LINE:
ORGANELLE:
IMMEDIATE SOURCE:
LIBRARY:
CLONE:
POSITION IN GENOME:
CHROMOSOME/SEGMENT:
MAP POSITION:
UNITS:
FEATURE:
NAME/KEY:
LOCATION:
IDENTIFICATION METHOD:
OTHER INFORMATION:
PUBLICATION INFORMATION:
AUTHORS:
TITLE:
JOURNAL:
VOLUME:
ISSUE:
PAGES:
DATE:
DOCUMENT NUMBER:
FILING DATE:
PUBLICATION DATE:
RELEVANT RESIDUES IN SEQ ID NO:
US-07-959-369-6

Query Match 100.0%; Score 826; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 66-89; Indels 0; Gaps 0;
Matches 155; Conservative 0; Mismatches 0;

QY 1 MAAGSITTLPALPEDGSGAPPGHFKDPKRLCKNGGFFLRHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAPPGHFKDPKRLCKNGGFFLRHPDGRVDGVRKSDPHI 60
QY 61 KIQLOAEERGVSIGKVCANRYLAMKEDGRLASCVTDECFPERLESNNNTYRSRKY 120
DB 61 KIQLOAEERGVSIGKVCANRYLAMKEDGRLASCVTDECFPERLESNNNTYRSRKY 120
QY 121 TSWYVALKRTGQYKLGSKTGPQKALFLPMSAKS 155
DB 121 TSWYVALKRTGQYKLGSKTGPQKALFLPMSAKS 155

RESULT 2
US-07-842-177A-1
Sequence 1, Application US/07842177A
Patent No. 5348863
GENERAL INFORMATION:
APPLICANT: MONSIEUR PIERRE
APPLICANT: PAUL, FRANCOIS
APPLICANT: BETBEDER, DIDIER
APPLICANT: SARMIENOS, PAOLO
TITLE OF INVENTION: PROCESS FOR THE ENZYMATIC PREPARATION OF
TITLE OF INVENTION: BASIC FIBROBLAST GROWTH FACTOR
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT,
STREET: 1755 Jefferson Davis Highway, Suite 400
CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/842,177A
FILING DATE: 19920402
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9017008.5
FILING DATE: 02-AUG-1990
ATTORNEY/AGENT INFORMATION:
NAME: OBLON, NO. 5348863man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 769-263-0 PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 521-4500
TELEFAX: (703) 486-2347
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
US-07-842-177A-1

Query Match 100.0%; Score 826; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 66-89; Indels 0; Gaps 0;
Matches 155; Conservative 0; Mismatches 0;

QY 1 MAAGSITTLPALPEDGSGAPPGHFKDPKRLCKNGGFFLRHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAPPGHFKDPKRLCKNGGFFLRHPDGRVDGVRKSDPHI 60
QY 61 KIQLOAEERGVSIGKVCANRYLAMKEDGRLASCVTDECFPERLESNNNTYRSRKY 120
DB 61 KIQLOAEERGVSIGKVCANRYLAMKEDGRLASCVTDECFPERLESNNNTYRSRKY 120
QY 121 TSWYVALKRTGQYKLGSKTGPQKALFLPMSAKS 155
DB 121 TSWYVALKRTGQYKLGSKTGPQKALFLPMSAKS 155

RESULT 3
US-08-439-725A-10
Sequence 10, Application US/08439725A
Patent No. 5693775
GENERAL INFORMATION:
APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.
APPLICANT: Macke, Jennifer P.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS
TITLE OF INVENTION: FACTOR-1 (FHF-1) AND METHODS OF USE
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/439,725A
FILING DATE: 12-MAY-1995
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Haile, Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 07265/047001
TELECOMMUNICATION INFORMATION:

TELEPHONE: 619/678-5070
TELEFAX: 617/678-5099
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-439-725A-10

Query Match 100.0%; Score 826; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 66-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRIHDPGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRIHDPGRVDGVREKSDPHI 60
QY 61 KLOLQAEERGVSISKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLOLQAEERGVSISKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 4

US-08-325-632-1
Sequence 1, Application US/08325632
Patent No. 571438
GENERAL INFORMATION:
APPLICANT: ADAMI, MARCO
APPLICANT: DALLA CASA, ROSANNA
APPLICANT: GAMBINI, LUCIANO
APPLICANT: MAGRINI, ROBERTO
APPLICANT: MARIANI, GIOVANNI
APPLICANT: PERRONE, GIOVANNI
TITLE OF INVENTION: STABLE PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: CONTAINING A FIBROBLAST GROWTH FACTOR
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT,
ADDRESS: P.C.
STREET: 1755 Jefferson Davis Highway, Fourth Floor
CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 22202
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/325,632
FILING DATE:
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/966,077
FILING DATE:
APPLICATION NUMBER: GB 9015824.7
FILING DATE: 18-JUL-1990
ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 571445man F.
REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 769-288-0 PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)413-3000
TELEFAX: (703)413-2220
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 1:

SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-325-632-1

Query Match 100.0%; Score 826; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 66-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRIHDPGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRIHDPGRVDGVREKSDPHI 60
QY 61 KLOLQAEERGVSISKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLOLQAEERGVSISKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 5

US-08-462-1698-10
Sequence 10, Application US/084621698
Patent No. 5773252
GENERAL INFORMATION:
APPLICANT: John Greene and Craig A. Rosen
TITLE OF INVENTION: Fibroblast Growth Factor-15
NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: CECILIA, BYRNE, BAIN, GILFILLAN,
ADDRESS: CECCHI, STEWART & OLSTEIN
STREET: 6 BECKER FARM ROAD
CITY: ROSELAND
STATE: NEW JERSEY
COUNTRY: USA
ZIP: 07068
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 INCH DISKETTE
COMPUTER: IBM PS/2
OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/462,1698
FILING DATE: 05 JUN 95
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: MULLINS, J.G.
REGISTRATION NUMBER: 33,073
REFERENCE/DOCKET NUMBER: 325800-441 (PF203)
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-994-1700
TELEFAX: 201-994-1744
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 AMINO ACIDS
TYPE: AMINO ACID
STRANDEDNESS:
TOPOLOGY: LINEAR
MOLECULE TYPE: PROTEIN
US-08-462-1698-10
Query Match 100.0%; Score 826; DB 1; Length 155;
Best Local Similarity 100.0%; Pred. No. 66-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 61 KLOLAERGVISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNYTSRKY 120
DB 61 KLOLAERGVISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNYTSRKY 120

QY 121 TSMYALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMYALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 6
US-08-867-471-10
Sequence 10, Application US/08867471
Patent No. 5872226

GENERAL INFORMATION:

APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.

TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS

TITLE OF INVENTION: FACTOR-1 (FHF-1) AND METHODS OF USE

NUMBER OF SEQUENCES: 15

CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA

ZIP: 92037

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

OPERATING SYSTEM: IBM PC compatible

SOFTWARE: Patent Release #1.0, Version #1.30

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/867,471

FILING DATE: 02-JUN-1997

CLASSIFICATION: 536

PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/439,725

FILING DATE: 12-MAY-1995

ATTORNEY/AGENT INFORMATION:
NAME: Haile, Lisa A.
REGISTRATION NUMBER: 38,347

REFERENCE/DOCKET NUMBER: 07265/047001

TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070

TELEFAX: 617/678-5099

INFORMATION FOR SEQ ID NO: 10:

SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids

TYPE: amino acid

STRANDEDNESS: not relevant

TOPOLOGY: linear

MOLECULE TYPE: protein

US-08-867-471-10

Query Match

Best Local Similarity 100.0%; Score 826; DB 2; Length 155;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPRKLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPRKLYCKNGGFFLRHPDGRVGVREKSDPHI 60

QY 61 KLOLAERGVISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNYTSRKY 120
DB 61 KLOLAERGVISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNYTSRKY 120

QY 121 TSMYALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMYALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 7
US-08-438-439C-14
Sequence 14, Application US/08438439C
Patent No. 5876967

GENERAL INFORMATION:

APPLICANT: Nathans, Jeremy
APPLICANT: Smallwood, Philip M.

TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS

TITLE OF INVENTION: FACTOR-2 AND METHODS OF USE

NUMBER OF SEQUENCES: 25

CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 4225 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA

ZIP: 92037

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk

OPERATING SYSTEM: IBM PC compatible

SOFTWARE: Patent Release #1.0, Version #1.30

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/438,439C

FILING DATE: May 12, 1995

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:
NAME: Haile, Lisa A.
REGISTRATION NUMBER: 38,347

REFERENCE/DOCKET NUMBER: 07265/046001

TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070

TELEFAX: 617/678-5099

INFORMATION FOR SEQ ID NO: 14:

SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids

TYPE: amino acid

STRANDEDNESS: not relevant

TOPOLOGY: linear

MOLECULE TYPE: protein

US-08-438-439C-14

Query Match

Best Local Similarity 100.0%; Score 826; DB 2; Length 155;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPRKLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPRKLYCKNGGFFLRHPDGRVGVREKSDPHI 60

QY 61 KLOLAERGVISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNYTSRKY 120
DB 61 KLOLAERGVISIKVCANRYLAMKEDRLASKCVTDECFEERLESNNYTSRKY 120

QY 121 TSMYALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMYALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 8
US-08-951-822-28

Sequence 28, Application US/08951822A

Patent No. 5989866

GENERAL INFORMATION:

APPLICANT: Delisher, Theresa A.

APPLICANT: Conklin, Darrell C.

APPLICANT: Raymond, Penella

APPLICANT: Bukowski, Thomas R.

APPLICANT: Holderman, Susan D.

APPLICANT: Hansen, Birgit

APPLICANT: Sheppard, Paul O.

TITLE OF INVENTION: NOVEL FGF HOMOLOGS

FILE REFERENCE: 96-20
CURRENT APPLICATION NUMBER: US/08/951,822A
CURRENT FILING DATE: 1997-10-16
NUMBER OF SEQ ID NOS: 36
SOFTWARE: FastSeq for Windows Version 3.0
SEQ ID NO: 28
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-08-951-822-28

Query Match 100.0%; Score 826; DB 2; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
QY 61 KLOQAEERGVVISIKGCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVISIKGCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 9
US-09-103-079-10
Sequence 10, Application US/09103079A
Patent No. 6013477
GENERAL INFORMATION:
APPLICANT: Greene, John M.
APPLICANT: Rosen, Craig A.
TITLE OF INVENTION: Fibroblast Growth Factor 15
FILE REFERENCE: PF203D1
CURRENT APPLICATION NUMBER: US/09/103,079A
CURRENT FILING DATE: 1998-06-23
EARLIER APPLICATION NUMBER: 08/462,169
EARLIER FILING DATE: 1995-06-05
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 10
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-103-079-10

Query Match 100.0%; Score 826; DB 3; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
QY 61 KLOQAEERGVVISIKGCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVISIKGCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 10
US-08-705-245-6
Sequence 6, Application US/08705245
Patent No. 6020189
GENERAL INFORMATION:
APPLICANT: Nathans et al., Jeremy
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR HOMOLOGOUS

TITLE OF INVENTION: FACTORS (FhFs) AND METHODS OF USE
NUMBER OF SEQUENCES: 37
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 425 Executive Square, Suite 1400
CITY: La Jolla
STATE: CA
COUNTRY: USA
ZIP: 92037

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/705,245
FILING DATE: 30-AUG-1996
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Metherell, Jr., John R.
REGISTRATION NUMBER: 31,678
REFERENCE/DOCKET NUMBER: 07265/094001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619/678-5070
TELEFAX: 619/678-50999
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-705-245-6

Query Match 100.0%; Score 826; DB 3; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVGVREKSDPHI 60
QY 61 KLOQAEERGVVISIKGCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLOQAEERGVVISIKGCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 11
US-08-897-924A-25
Sequence 25, Application US/08897924A
Patent No. 6028058
GENERAL INFORMATION:
APPLICANT: Florjanczyk, Robert Z.
TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR REGULATING
TITLE OF INVENTION: NUCLEAR TRAFFICKING OF PROTEINS
NUMBER OF SEQUENCES: 28
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED AND BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
CITY: Seattle
STATE: Washington
COUNTRY: USA
ZIP: 98104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/897,924A
FILING DATE: 21-JUL-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: MAKI, David J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 200124,403
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-897-924A-25

Query Match 100.0%; Score 826; DB 3; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAGSITTLPALPEDGSGAFPFGHFKDPKRLYCCKNGGFFLRHPDGRVDGVREKSDPHI 60
DB 1 MAGSITTLPALPEDGSGAFPFGHFKDPKRLYCCKNGGFFLRHPDGRVDGVREKSDPHI 60
QY 61 KLQLQAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLQLQAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 12

US-08-718-904-11

Sequence 11, Application US/08718904

Patent No. 6037329

GENERAL INFORMATION:

APPLICANT: Baird, J. Andrew

APPLICANT: Chandler, Lois Ann

APPLICANT: Sosnowski, Barbara A.

TITLE OF INVENTION: COMPOSITIONS CONTAINING NUCLEIC ACIDS AND LIGANDS FOR THERAPE

NUMBER OF SEQUENCES: 128

CORRESPONDENCE ADDRESS:

ADDRESSEE: SEED AND BERRY LLP

STREET: 6300 Columbia Center, 701 Fifth Avenue

CITY: Seattle

STATE: Washington

COUNTRY: USA

ZIP: 98104-7092

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/718,904

FILING DATE: 24-SEP-1996

CLASSIFICATION: 424

ATTORNEY/AGENT INFORMATION:

NAME: No. 6037329, enburg Ph.D., Carol

REGISTRATION NUMBER: 39,317

REFERENCE/DOCKET NUMBER: 760100,415c1

TELECOMMUNICATION INFORMATION:

TELEPHONE: (206) 622-4900

TELEFAX: (206) 682-6031

INFORMATION FOR SEQ ID NO: 11:

SEQUENCE CHARACTERISTICS:

LENGTH: 155 amino acids

TYPE: amino acid

STRANDEDNESS: single

TOPOLOGY: unknown
MOLECULE TYPE: peptide
FEATURE:
OTHER INFORMATION: /note="FGF-2"
US-08-718-904-11

Query Match 100.0%; Score 826; DB 3; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAGSITTLPALPEDGSGAFPFGHFKDPKRLYCCKNGGFFLRHPDGRVDGVREKSDPHI 60
DB 1 MAGSITTLPALPEDGSGAFPFGHFKDPKRLYCCKNGGFFLRHPDGRVDGVREKSDPHI 60
QY 61 KLQLQAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLQLQAEERGVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 13

US-09-023-082A-17

Sequence 17, Application US/09023082A

Patent No. 6077692

GENERAL INFORMATION:

APPLICANT: RUBEN, STEVEN M.

APPLICANT: JIMENEZ, PABLO

APPLICANT: DUAN, D. ROXANNE

APPLICANT: RAMPY, MARK A.

APPLICANT: MENDRICK, DONNA

APPLICANT: ZHANG, JUN

APPLICANT: NI, JIAN

APPLICANT: MOORE, PAUL A.

APPLICANT: COLEMAN, TIMOTHY A.

APPLICANT: GRUBER, JOACHIM R.

APPLICANT: DILLON, PATRICK J.

APPLICANT: GENTZ, REINER L.

TITLE OF INVENTION: KERATINOCYTE GROWTH FACTOR-2

NUMBER OF SEQUENCES: 148

CORRESPONDENCE ADDRESS:

ADDRESSEE: STERN, KESSLER, GOLDSTEIN & FOX, P.L.L.C.

STREET: 1100 NEW YORK AVE, NW, SUITE 600

CITY: WASHINGTON

STATE: DC

COUNTRY: USA

ZIP: 20005-3934

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/023,082A

FILING DATE: 13-FEB-1998

CLASSIFICATION: 435

APPLICATION NUMBER: PCT/US95/01790

FILING DATE: 14-FEB-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/461,195

FILING DATE: 05-JUN-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 60/023,852

FILING DATE: 13-AUG-1996

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 60/039,045

FILING DATE: 28-FEB-1997

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/862,432

FILING DATE: 23-MAY-1997

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/910,875
FILING DATE: 13-AUG-1997
PRIOR APPLICATION DATA: 60/055,561
APPLICATION NUMBER: US 60/055,561
FILING DATE: 13-AUG-1997
ATTORNEY/AGENT INFORMATION:
NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,688
REFERENCE/DOCKET NUMBER: 1488,0360008/EKS
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 155 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
MOLECULE TYPE: protein
US-09-023-082A-17

Query Match 100.0%; Score 826; DB 3; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 MAAGSITTLPLPDDGGGAFPPGHFKDPKRLCYKNGGFFLRHPDGVGVREKSDPHI 60
QY 61 KLOLAERGVVSTKGVCANRYLAMKEDGRLASCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLOLAERGVVSTKGVCANRYLAMKEDGRLASCVTDECFEERLESNNYNTYRSRY 120
QY 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 14

US-09-030-613-3

Sequence 3, Application US/09030613

Patent No. 6083706

GENERAL INFORMATION:

APPLICANT: Flokiewicz, Robert Z.

APPLICANT: Baird, J. Andrew

TITLE OF INVENTION: INHIBITORS OF LEADERLESS PROTEIN EXPORT

NUMBER OF SEQUENCES: 36

CORRESPONDENCE ADDRESS:

ADDRESSEE: SEED AND BERRY LLP

STREET: 6300 Columbia Center, 701 Fifth Avenue

CITY: Seattle

STATE: Washington

COUNTRY: USA

ZIP: 98104

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

OPERATING SYSTEM: IBM PC compatible

SOFTWARE: Patent Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/030,613

FILING DATE: 25-FEB-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:

NAME: No. 6083706tenburg Ph.D., Carol

REGISTRATION NUMBER: 39,317

REFERENCE/DOCKET NUMBER: 760100,418C1

TELECOMMUNICATION INFORMATION:

TELEPHONE: (206) 622-4900

TELEFAX: (206) 682-6031

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 155 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-030-613-3

Query Match 100.0%; Score 826; DB 3; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 MAAGSITTLPLPDDGGGAFPPGHFKDPKRLCYKNGGFFLRHPDGVGVREKSDPHI 60
QY 61 KLOLAERGVVSTKGVCANRYLAMKEDGRLASCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLOLAERGVVSTKGVCANRYLAMKEDGRLASCVTDECFEERLESNNYNTYRSRY 120
QY 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 15

US-09-098-628-2

Sequence 2, Application US/09098628

Patent No. 6294359

GENERAL INFORMATION:

APPLICANT: FIDES, J.C.

APPLICANT: ABRAHAM, J.D.

TITLE OF INVENTION: HUMAN BASIC FIBROBLAST GROWTH

TITLE OF INVENTION: FACTOR ANALOG

NUMBER OF SEQUENCES: 69

CORRESPONDENCE ADDRESS:

ADDRESSEE: MORRISON & FOERSTER

STREET: 755 PAGE MILL ROAD

CITY: Palo Alto

STATE: CA

COUNTRY: USA

ZIP: 94304-1018

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette

COMPUTER: IBM compatible

OPERATING SYSTEM: Windows

SOFTWARE: FastSeq for Windows Version 2.0b

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/098,628

FILING DATE:

CLASSIFICATION:

PRIOR APPLICATION DATA:

APPLICATION NUMBER:

FILING DATE:

ATTORNEY/AGENT INFORMATION:

NAME: Lehnhardt, Susan K

REGISTRATION NUMBER: 33,943

REFERENCE/DOCKET NUMBER: 21900-20089.10

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650-813-5600

TELEFAX: 650-494-0792

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: 155 amino acids

TYPE: amino acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

FRAGMENT TYPE: internal

US-09-098-628-2

Query Match 100.0%; Score 826; DB 4; Length 155;
Best Local Similarity 100.0%; Pred. No. 6e-89;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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    |||||
Db 1 MAAGSITTLPALPEDGGSGAPPGHFKDPKRLYCKNGGFFELRIHPDGRVDGVREKSDPHI 60
    |||||
Qy 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 120
    |||||
Db 61 KLOLAERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 120
    |||||
Qy 121 TSMVVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
    |||||
Db 121 TSMVVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
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Search completed: December 16, 2002, 17:58:24
 Job time : 11.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:53:40 ; Search time 7.5 Seconds

(Without alignments)
344.355 Million cell updates/sec

Title: US-09-886-856-8

Perfect score: 826
Sequence: 1 MAAGSTTLPALPEDGSGA.....GSKTGPQKAILFLPMSAKS 155

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 105981 seqs, 1662342 residues

Total number of hits satisfying chosen parameters: 105981

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database : Published Applications AA:*

- 1: /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB pep:*
- 2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB pep:*
- 3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB pep:*
- 4: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB pep:*
- 5: /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB pep:*
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- 10: /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB pep:*
- 11: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB pep:*
- 12: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB pep:*
- 13: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB pep:*
- 14: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----|------------------|
| 1 | 826 | 100.0 | 155 | 10 | US-09-822-485-5 |
| 2 | 826 | 100.0 | 155 | 10 | US-09-802-365-8 |
| 3 | 826 | 100.0 | 155 | 10 | US-09-251-263-10 |
| 4 | 826 | 100.0 | 155 | 10 | US-09-425-021-10 |
| 5 | 826 | 100.0 | 155 | 10 | US-09-886-856-8 |
| 6 | 826 | 100.0 | 155 | 10 | US-09-749-1288-7 |
| 7 | 826 | 100.0 | 155 | 10 | US-09-826-210-2 |
| 8 | 826 | 100.0 | 210 | 10 | US-09-902-773A-4 |
| 9 | 821 | 99.4 | 159 | 10 | US-09-934-706-2 |
| 10 | 821 | 98.9 | 501 | 10 | US-09-934-706-4 |
| 11 | 817 | 98.9 | 155 | 10 | US-09-802-365-6 |
| 12 | 817 | 98.9 | 155 | 10 | US-09-886-856-6 |
| 13 | 804 | 97.3 | 150 | 12 | US-10-016-447-8 |
| 14 | 785 | 95.0 | 146 | 9 | US-10-131-965-3 |
| 15 | 785 | 95.0 | 146 | 10 | US-09-802-365-4 |
| 16 | 785 | 95.0 | 146 | 10 | US-09-886-856-4 |
| 17 | 776 | 93.9 | 146 | 9 | US-10-131-965-5 |
| 18 | 776 | 93.9 | 146 | 10 | US-09-802-365-2 |
| 19 | 776 | 93.9 | 146 | 10 | US-09-771-302-2 |

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|----|-------|------|-----|----|------------------|--------------------|
| 20 | 776 | 93.9 | 146 | 10 | US-09-886-856-2 | Sequence 2, Appli |
| 21 | 720 | 87.2 | 134 | 9 | US-09-901-938-24 | Sequence 24, Appli |
| 22 | 409.5 | 49.6 | 155 | 9 | US-09-929-945-2 | Sequence 2, Appli |
| 23 | 409.5 | 49.6 | 155 | 10 | US-09-284-663A-9 | Sequence 9, Appli |
| 24 | 409.5 | 49.6 | 155 | 10 | US-09-902-773A-3 | Sequence 3, Appli |
| 25 | 409.5 | 49.6 | 155 | 10 | US-09-251-263-9 | Sequence 9, Appli |
| 26 | 409.5 | 49.6 | 155 | 10 | US-09-425-021-9 | Sequence 9, Appli |
| 27 | 409.5 | 49.6 | 155 | 10 | US-09-929-918-2 | Sequence 2, Appli |
| 28 | 409.5 | 49.6 | 155 | 10 | US-09-929-918-11 | Sequence 11, Appli |
| 29 | 404.5 | 49.0 | 154 | 9 | US-09-929-945-8 | Sequence 8, Appli |
| 30 | 400.5 | 48.5 | 153 | 10 | US-09-822-485-4 | Sequence 4, Appli |
| 31 | 388.5 | 47.0 | 149 | 12 | US-10-016-447-9 | Sequence 9, Appli |
| 32 | 386 | 46.7 | 141 | 9 | US-09-929-945-7 | Sequence 7, Appli |
| 33 | 379 | 45.9 | 137 | 9 | US-09-929-918-7 | Sequence 7, Appli |
| 34 | 379 | 45.9 | 137 | 9 | US-09-901-938-23 | Sequence 23, Appli |
| 35 | 370 | 44.8 | 140 | 9 | US-10-131-965-1 | Sequence 1, Appli |
| 36 | 366 | 44.3 | 135 | 9 | US-09-929-945-5 | Sequence 5, Appli |
| 37 | 366 | 44.3 | 135 | 10 | US-09-929-918-5 | Sequence 5, Appli |
| 38 | 361 | 43.7 | 158 | 12 | US-10-016-447-18 | Sequence 18, Appli |
| 39 | 357 | 43.2 | 140 | 9 | US-10-131-965-2 | Sequence 2, Appli |
| 40 | 321 | 38.9 | 155 | 10 | US-09-425-021-24 | Sequence 24, Appli |
| 41 | 257.5 | 31.2 | 206 | 10 | US-09-251-263-13 | Sequence 13, Appli |
| 42 | 255.5 | 30.9 | 205 | 9 | US-10-131-965-8 | Sequence 8, Appli |
| 43 | 255.5 | 30.9 | 206 | 10 | US-09-822-485-7 | Sequence 7, Appli |
| 44 | 255.5 | 30.9 | 206 | 10 | US-09-750-963-9 | Sequence 9, Appli |
| 45 | 255.5 | 30.9 | 206 | 10 | US-09-902-773A-5 | Sequence 5, Appli |

ALIGNMENTS

RESULT 1
US-09-822-485-5
Sequence 5, Application US/09822485
Patent No. US20020001825A1
GENERAL INFORMATION:
APPLICANT: Itoh, No. US0020001825A1uyuk1
TITLE OF INVENTION: NO. US20020001825A1el Fibroblast Growth Factor-Like Polypeptides
FILE REFERENCE: 08035.0001-01000
CURRENT APPLICATION NUMBER: US/09/822,485
CURRENT FILING DATE: 2001-04-02
NUMBER OF SEQ ID NOS: 35
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 5
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
PUBLICATION INFORMATION:
JOURNAL: EMBO J.
VOLUME: 5
PAGES: 2523-2528
DATE: 1986
US-09-822-485-5

Query Match 100.0%; Score 826; DB 10; Length 155;
Best Local Similarity 100.0%; Pred. No. 3, 1e-78;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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| QY | 1 | MAAGSTTLPALPEDGSGAFPPGHFKDKPKRLCYKNCGFFLRIPHDPGRVDPVREKSDPHI 60 | |
| DB | 1 | MAAGSTTLPALPEDGSGAFPPGHFKDKPKRLCYKNCGFFLRIPHDPGRVDPVREKSDPHI 60 | |
| QY | 61 | KLQDAERGVVSIKGYCANRYLANKEDGRLLASKCVTDCEFFERLESNNYTRSKRY 120 | |
| DB | 61 | KLQDAERGVVSIKGYCANRYLANKEDGRLLASKCVTDCEFFERLESNNYTRSKRY 120 | |
| QY | 121 | TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155 | |
| DB | 121 | TSWYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155 | |

RESULT 2
US-09-802-365-8

61 KLOQAEGRVYSIKGVANRYLAMKEDGBLLASCVTDECFEERLESNNNTYRSRKY 120

ORGANISM: Homo sapiens
US-09-886-856-8

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| Query Match | 100.0% | Score 826, DB 10 | length 155, |
| Best Local Similarity | 100.0% | Prod. No. 3.1e-78 | |
| Matches 155; Conservative | 0; | Mismatches 0; | Indels 0; Gaps 0 |

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 60
QY 61 KLOLQAEERGVVISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLOLQAEERGVVISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 6
US-09-749-728B-7
Sequence 7, Application US/09749728B
Patent No. US20020142457A1
GENERAL INFORMATION:
APPLICANT: Umezawa, Akihito
APPLICANT: Hata, Jun-ichi
APPLICANT: Fukuda, Keiichi
APPLICANT: Ogawa, Satoehi
APPLICANT: Sakurada, Kazuhiko
APPLICANT: Gojo, Satoru
APPLICANT: Yamada, Yoji
TITLE OF INVENTION: THE CELL HAVING THE POTENTIALITY OF DIFFERENTIATION INTO CARDIOMY
FILE REFERENCE: 00766.000043
CURRENT APPLICATION NUMBER: US/09/749, 728B
CURRENT FILING DATE: 2001-09-17
PRIOR APPLICATION NUMBER: H11-372826
PRIOR FILING DATE: 1999-12-28
PRIOR APPLICATION NUMBER: PCT-JP00-01148
PRIOR FILING DATE: 2000-02-28
PRIOR APPLICATION NUMBER: PCT-JP00-07741
PRIOR FILING DATE: 2000-11-02
NUMBER OF SEQ ID NOS: 80
SOFTWARE: PatentIn Ver.2.0
SEQ ID NO 7
LENGTH: 155
TYPE: PRT
ORGANISM: Homo sapiens
US-09-749-728B-7

Query Match 100.0%; Score 826; DB 10; Length 155;
Best Local Similarity 100.0%; Pred. No. 3.1e-78;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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DB 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 60
QY 61 KLOLQAEERGVVISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLOLQAEERGVVISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 7
US-09-826-210-2
Sequence 2, Application US/09826210
Patent No. US2001020004A1
GENERAL INFORMATION:
APPLICANT: Springer, Barry A.
APPLICANT: Pantoliano, Michael W.
APPLICANT: Sharp, Celia M.
TITLE OF INVENTION: Analogs of Human basic Fibroblast Growth Factor
FILE REFERENCE: 1503.022003
CURRENT APPLICATION NUMBER: US/09/826, 210
CURRENT FILING DATE: 2001-04-05

PRIOR APPLICATION NUMBER: US 09/220, 077
PRIOR FILING DATE: 1998-12-23
PRIOR APPLICATION NUMBER: US 60/068, 667
PRIOR FILING DATE: 1997-12-23
NUMBER OF SEQ ID NOS: 4
SOFTWARE: PatentIn version 3.0
SEQ ID NO 2
LENGTH: 158
TYPE: PRT
ORGANISM: Homo sapiens
US-09-826-210-2

Query Match 100.0%; Score 826; DB 10; Length 158;
Best Local Similarity 100.0%; Pred. No. 3.2e-78;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 60
DB 4 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFFLRHPDGRVDGVREKSDPHI 63
QY 61 KLOLQAEERGVVISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 120
DB 64 KLOLQAEERGVVISIKVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRY 123
QY 121 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 124 TSWYVALKRTGOYKLGSKTGPQKAILFLPMSAKS 158

RESULT 8
US-09-902-773A-4
Sequence 4, Application US/09902773A
Patent No. US20020034787A1
GENERAL INFORMATION:
APPLICANT: HU, JING-SHAN
GOCAYNE, JEANNINE D.
TITLE OF INVENTION: FIBROBLAST GROWTH FACTOR-10
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX
STREET: 1100 NEW YORK AVENUE, SUITE 600
CITY: WASHINGTON
STATE: DC
COUNTRY: US
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/902, 773A
FILING DATE: 12-Jul-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/803, 926
FILING DATE: 21-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36, 688
REFERENCE/DOCKET NUMBER: 1488, 0350001
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 371-2600
TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 210 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: Protein
SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-902-773A-4

Query Match 100.0%; Score 826; DB 10; Length 210;
Best Local Similarity 100.0%; Pred. No. 4.5e-78;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
DB 56 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 115

QY 61 LQLOAEERGVVISIKGVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRKY 120
DB 116 LQLOAEERGVVISIKGVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRKY 175

QY 121 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 176 TSMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 210

RESULT 9
US-09-934-706-2
Sequence 2, Application US/09934706
Patent No. US20020102709A1
GENERAL INFORMATION:
APPLICANT: Terumo Corporation
TITLE OF INVENTION: Functional Hybrid Polypeptide with Collagen-binding
FILE REFERENCE: 19990120
CURRENT APPLICATION NUMBER: US/09/934,706
CURRENT FILING DATE: 2001-08-23
NUMBER OF SEQ ID NOS: 16
SOFTWARE:
SEQ ID NO 2
LENGTH: 159
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: Human Basic
OTHER INFORMATION: Fibroblast Growth Factor with Enterokinase
OTHER INFORMATION: Recognition Sequence
NAME/KEY: PEPTIDE
LOCATION: (1)..(5)
OTHER INFORMATION: /note="enterokinase recognition sequence"
NAME/KEY: PEPTIDE
LOCATION: (6)..(159)
OTHER INFORMATION: /note="human fibroblast growth factor"
US-09-934-706-2

Query Match 99.4%; Score 821; DB 10; Length 159;
Best Local Similarity 100.0%; Pred. No. 1.1e-77;
Matches 154; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 AAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 61
DB 6 AAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 65

QY 62 LQLOAEERGVVISIKGVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRKY 121
DB 66 LQLOAEERGVVISIKGVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRKY 125

QY 122 SMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 126 SMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 159

RESULT 10
US-09-934-706-4
Sequence 4, Application US/09934706
Patent No. US20020102709A1
GENERAL INFORMATION:
APPLICANT: Terumo Corporation
TITLE OF INVENTION: Functional Hybrid Polypeptide with Collagen-binding
FILE REFERENCE: 19990120

CURRENT APPLICATION NUMBER: US/09/934,706
CURRENT FILING DATE: 2001-08-23
NUMBER OF SEQ ID NOS: 16
SOFTWARE:
SEQ ID NO 4
LENGTH: 501
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: Hybrid
OTHER INFORMATION: Polypeptide of Human Fibronectin Collagen-Binding
OTHER INFORMATION: Domain and Human Basic Fibroblast Growth Factor
NAME/KEY: INIT _MET
LOCATION: (1)
NAME/KEY: DOMAIN
LOCATION: (2)..(341)
OTHER INFORMATION: /note="human fibronectin collagen-binding domain"
NAME/KEY: PEPTIDE
LOCATION: (343)..(347)
OTHER INFORMATION: /note="enterokinase recognition sequence"
NAME/KEY: PEPTIDE
LOCATION: (348)..(501)
OTHER INFORMATION: /note="human fibroblast growth factor"
US-09-934-706-4

Query Match 99.4%; Score 821; DB 10; Length 501;
Best Local Similarity 100.0%; Pred. No. 4.1e-77;
Matches 154; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 AAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 61
DB 348 AAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 407

QY 62 LQLOAEERGVVISIKGVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRKY 121
DB 408 LQLOAEERGVVISIKGVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYRSRKY 467

QY 122 SMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 468 SMYVALKRTGYKLGSKTGPQKAILFLPMSAKS 501

RESULT 11
US-09-802-365-6
Sequence 6, Application US/09802365
Patent No. US20020032153A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha Jo
TITLE OF INVENTION: Methods and Compositions for the
TITLE OF INVENTION: Treatment and Prevention of Erectile Dysfunction
FILE REFERENCE: 1671.003
CURRENT APPLICATION NUMBER: US/09/802,365
CURRENT FILING DATE: 2001-03-09
PRIOR APPLICATION NUMBER: 60/188,480
PRIOR FILING DATE: 2000-03-10
PRIOR APPLICATION NUMBER: 60/203,415
PRIOR FILING DATE: 2000-05-11
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 6
LENGTH: 155
TYPE: PRT
ORGANISM: Bos taurus
US-09-802-365-6

Query Match 98.9%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 2.6e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60

QY 61 KLQLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
DB 61 KLQLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
QY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 12
US-09-886-856-6
Sequence 6, Application US/09886856
Patent No. US20020115603A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha Jo
TITLE OF INVENTION: Methods and Compositions for the
TITILE OF INVENTION: Treatment of Peripheral Artery Disease
FILE REFERENCE: PPI6090.004
CURRENT APPLICATION NUMBER: US/09/886,856
CURRENT FILING DATE: 2001-06-21
PRIOR APPLICATION NUMBER: 60/213,504
PRIOR FILING DATE: 2000-06-22
PRIOR APPLICATION NUMBER: 60/264,572
PRIOR FILING DATE: 2000-01-26
PRIOR APPLICATION NUMBER: 60/276,549
PRIOR FILING DATE: 2001-03-16
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 6
LENGTH: 155
TYPE: PRT
ORGANISM: Bos taurus
US-09-886-856-6

Query Match 98.9%; Score 817; DB 10; Length 155;
Best Local Similarity 98.7%; Pred. No. 2,6e-77;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHI 60
QY 61 KLQLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
DB 61 KLQLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
QY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

RESULT 13
US-10-016-447-8
Sequence 8, Application US/10016447
Patent No. US20020090651A1
GENERAL INFORMATION:
APPLICANT: Kirschner, Marc W.
APPLICANT: Kirschner, Marc W.
TITLE OF INVENTION: Receptor-Ligand Assay
FILE REFERENCE: HU95-01A2
CURRENT APPLICATION NUMBER: US/10/016,447
CURRENT FILING DATE: 2001-12-10
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US/08/776,207
PRIOR FILING DATE: EARLIER FILING DATE: 1997-06-23
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/441,629
PRIOR FILING DATE: EARLIER FILING DATE: 1995-05-15
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 08/279,217
PRIOR FILING DATE: EARLIER FILING DATE: 1994-07-22
NUMBER OF SEQ ID NOS: 18
SOFTWARE: FastSeq for Windows Version 3.0
SEQ ID NO 8
LENGTH: 150
TYPE: PRT

ORGANISM: Homo sapien
US-10-016-447-8
Query Match 97.3%; Score 804; DB 12; Length 150;
Best Local Similarity 100.0%; Pred. No. 5,6e-76;
Matches 150; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHI 60
QY 61 KLQLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
DB 61 KLQLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRY 120
QY 121 TSMYVALKRTGQYKLGSKTGPQKAILFLP 150
DB 121 TSMYVALKRTGQYKLGSKTGPQKAILFLP 150

RESULT 14
US-10-131-965-3
Sequence 3, Application US/10131965
Patent No. US20020165160A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha J.
APPLICANT: Kavanaugh, Michael W.
TITLE OF INVENTION: Angiogenetically Effective Unit Dose of FGF and Method of
TITILE OF INVENTION: Administering
FILE REFERENCE: 1296/12169U05
CURRENT APPLICATION NUMBER: US/10/131,965
CURRENT FILING DATE: 2002-04-25
PRIOR APPLICATION NUMBER: US/09/417,721
PRIOR FILING DATE: 1999-10-13
PRIOR APPLICATION NUMBER: 60/104,103
PRIOR FILING DATE: 1998-10-13
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 3
LENGTH: 146
TYPE: PRT
ORGANISM: Human FGF-2
US-10-131-965-3

Query Match 95.0%; Score 785; DB 9; Length 146;
Best Local Similarity 100.0%; Pred. No. 4,9e-74;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 10 PALPEDGSGAFPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHIKLQLAEE 69
DB 1 PALPEDGSGAFPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHIKLQLAEE 60
QY 70 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRYTSMYVALK 129
DB 61 GVSISIKVCANRYLAMKEDGRLLASKCVTDECFEERLESNNNTYRSRYTSMYVALK 120
QY 130 TQGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TQGYKLGSKTGPQKAILFLPMSAKS 146

RESULT 15
US-09-802-365-4
Sequence 4, Application US/09802365
Patent No. US20020032153A1
GENERAL INFORMATION:
APPLICANT: Whitehouse, Martha Jo
TITLE OF INVENTION: Methods and Compositions for the
TITILE OF INVENTION: Treatment and Prevention of Erectile Dysfunction
FILE REFERENCE: 1671.003
CURRENT APPLICATION NUMBER: US/09/802,365
CURRENT FILING DATE: 2001-03-09
PRIOR APPLICATION NUMBER: 60/188,480

/ PRIOR FILING DATE: 2000-03-10
/ PRIOR APPLICATION NUMBER: 60/203,415
/ PRIOR FILING DATE: 2000-05-11
/ NUMBER OF SEQ ID NOS: 9
/ SOFTWARE: FastSeq for Windows Version 4.0
/ SEQ ID NO 4
/ LENGTH: 146
/ TYPE: PRT
/ ORGANISM: Homo sapiens
US-09-802-365-4

Query Match 95.0%; Score 785; DB 10; Length 146;
Best Local Similarity 100.0%; Pred. No. 4.9e-74;
Matches 146; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 10 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHIKLOQAEER 69
Db 1 PALPEDGGSGAFPPGHFKDPKRLYCKNGGFLRIHPDGRVDGVREKSDPHIKLOQAEER 60
QY 70 GVSISIKGVCANRYLAKMEDGRLLASKCVTDECFPERLESNNNTYRSRKYTSWYVALKR 129
Db 61 GVSISIKGVCANRYLAKMEDGRLLASKCVTDECFPERLESNNNTYRSRKYTSWYVALKR 120
QY 130 TGQYKLGSKTGPQKAILFLPMSAKS 155
Db 121 TGQYKLGSKTGPQKAILFLPMSAKS 146

Search completed: December 16, 2002, 17:56:31
Job time : 7.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:53:20 ; Search time 14.5 Seconds
(without alignments)
1027.644 Million cell updates/sec

Title: 'US-09-886-856-8
Perfect score: 826
Sequence: 1 MAAGSTTTPALPEDGSGA.....GSKTGGQKALFLPMASAKS 155

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 263224 seqs, 96134422 residues
Total number of hits satisfying chosen parameters: 263224

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :
1: PIR.71:*
2: PIR2:*
3: PIR3:*
4: PIR4:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----------|--------------------|
| 1 | 826 | 100.0 | 210 | 2 A32398 | basic fibroblast g |
| 2 | 817 | 98.9 | 157 | 2 GKBOB | basic fibroblast g |
| 3 | 798.5 | 96.7 | 154 | 2 A31674 | basic fibroblast g |
| 4 | 783.5 | 94.9 | 154 | 2 C37360 | basic fibroblast g |
| 5 | 770 | 93.2 | 146 | 1 S00185 | basic fibroblast g |
| 6 | 760.5 | 92.1 | 164 | 2 S31622 | basic fibroblast g |
| 7 | 759 | 91.9 | 164 | 2 A48834 | basic fibroblast g |
| 8 | 738 | 89.3 | 137 | 2 A46711 | basic fibroblast g |
| 9 | 687 | 83.2 | 155 | 1 A40117 | basic fibroblast g |
| 10 | 468.5 | 56.7 | 125 | 2 A32484 | acidic fibroblast |
| 11 | 418.5 | 50.7 | 155 | 1 A60721 | acidic fibroblast |
| 12 | 410.5 | 49.7 | 155 | 2 A60130 | acidic fibroblast |
| 13 | 409.5 | 49.6 | 155 | 1 A33665 | acidic fibroblast |
| 14 | 404.5 | 49.0 | 155 | 2 S04147 | acidic fibroblast |
| 15 | 404.5 | 49.0 | 155 | 2 D37360 | acidic fibroblast |
| 16 | 403.5 | 48.8 | 152 | 2 JH0475 | acidic fibroblast |
| 17 | 395.5 | 47.9 | 155 | 2 JH0055 | acidic fibroblast |
| 18 | 393.5 | 47.6 | 155 | 1 GKBOA | acidic fibroblast |
| 19 | 265 | 32.1 | 194 | 1 J50710 | acidic fibroblast |
| 20 | 255.5 | 30.9 | 206 | 1 TVH0HS | acidic fibroblast |
| 21 | 253 | 30.6 | 256 | 2 J46627 | acidic fibroblast |
| 22 | 251 | 30.4 | 220 | 2 J50588 | acidic fibroblast |
| 23 | 250 | 30.3 | 208 | 2 S14192 | acidic fibroblast |
| 24 | 249 | 30.1 | 208 | 2 S20102 | acidic fibroblast |
| 25 | 247.5 | 30.0 | 264 | 2 J42668 | acidic fibroblast |
| 26 | 247.5 | 29.4 | 264 | 2 A36207 | acidic fibroblast |
| 27 | 242.5 | 29.4 | 266 | 2 S68144 | acidic fibroblast |
| 28 | 241.5 | 29.2 | 202 | 1 TVH0HS | acidic fibroblast |
| 29 | 239 | 28.9 | 187 | 2 S23595 | acidic fibroblast |

| | | | | | |
|----|-------|------|-----|-----------|--------------------|
| 30 | 237.5 | 28.8 | 237 | 1 S39582 | transforming prote |
| 31 | 237 | 28.7 | 245 | 1 TVH0ST2 | transforming prote |
| 32 | 236 | 28.6 | 239 | 1 S04742 | transforming prote |
| 33 | 234.5 | 28.4 | 192 | 2 S54407 | embryonic fibrobla |
| 34 | 233 | 28.2 | 267 | 1 TVH0FS | embryonic fibrobla |
| 35 | 217 | 26.3 | 208 | 2 S66486 | embryonic fibrobla |
| 36 | 217 | 26.3 | 208 | 2 A48137 | embryonic fibrobla |
| 37 | 210 | 25.4 | 211 | 2 J47353 | embryonic fibrobla |
| 38 | 209.5 | 25.4 | 194 | 2 J48610 | embryonic fibrobla |
| 39 | 208 | 25.2 | 208 | 2 J47082 | embryonic fibrobla |
| 40 | 207.5 | 25.1 | 194 | 1 A36301 | embryonic fibrobla |
| 41 | 207.5 | 25.1 | 194 | 2 S26049 | embryonic fibrobla |
| 42 | 207.5 | 25.1 | 194 | 2 S49501 | embryonic fibrobla |
| 43 | 206.5 | 25.0 | 194 | 2 J49501 | embryonic fibrobla |
| 44 | 205.5 | 24.9 | 207 | 2 J49540 | embryonic fibrobla |
| 45 | 204 | 24.7 | 212 | 2 J49541 | embryonic fibrobla |

ALIGNMENTS

RESULT 1

basic fibroblast growth factor precursor, 22.5K form - human
A32398
N/Alternate names: bFGF, fibroblast growth factor 2; prostatic growth factor; prostatic
C/Species: Homo sapiens (man)
C/Date: 31-Jul-1989 #sequence revision 31-Dec-1993 #text change 21-Jul-2000
C/Accession: A32398; A61537; A26642; B32878; S00297; A54316; B54316; A33624; A25624; B24
R/Pirats, H.; Kagnad, M.; Pirats, A.C.; Klagsbrun, M.; Lelias, J.M.; Liauzun, P.; Chalon,
Proc. Natl. Acad. Sci. U.S.A. 86, 1836-1840, 1989
A/Title: High molecular mass forms of basic fibroblast growth factor are initiated by a1
A/Reference number: A32398; MUID:89184522; PMID:2538817
A/Accession: A32398
A/Molecule type: mRNA
A/Residues: 1-210 <SH1>
A/Cross-references: GB:004513; NID:G183083; PIDN:AAA5531.1; PID:G459811
R/Shibata, F.; Baird, A.; Florkiewicz, R.Z.
Growth Factors 4, 277-287, 1991
A/Title: Functional characterization of the human basic fibroblast growth factor gene pr
A/Reference number: A61537; MUID:92110035; PMID:1764264
A/Accession: A61537
A/Molecule type: DNA
A/Residues: 1-114 <SH1>
A/Note: Authors translated the codon GCA for residue 47 as Ala
R/Kurokawa, T.; Sasada, R.; Iwane, M.; Igarashi, K.
FEBS Lett. 213, 189-194, 1987
A/Title: Cloning and expression of cDNA encoding human basic fibroblast growth factor.
A/Reference number: A26642; MUID:87162468; PMID:2435575
A/Accession: A26642
A/Molecule type: mRNA
A/Residues: 56-210 <KUR>
A/Cross-references: GB:M27968; NID:G182562; PIDN:AAA52448.1; PID:G182563
R/Abraham, J.A.; Whang, J.L.; Tumolo, A.; Merz, A.; Fiddes, J.C.
Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
A/Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organization
A/Reference number: A90924; MUID:87217066; PMID:3472745
A/Accession: B32878
A/Molecule type: mRNA
A/Residues: 56-210 <ABR>
A/Note: The authors translated the codon GAA for residue 108 as Gly
R/Abraham, J.A.; Whang, J.L.; Tumolo, A.; Merz, A.; Friedman, J.; Gospodarowicz, D.; F
EMBO J. 5, 2523-2528, 1986
A/Title: Human basic fibroblast growth factor: nucleotide sequence and genomic organization
A/Reference number: S00297; MUID:87053817; PMID:3780670
A/Accession: S00297
A/Status: not compared with conceptual translation
A/Molecule type: DNA
A/Residues: 1-155 <AB2>
A/Note: The authors translated the codon GAA for residue 108 as Gly
R/Shimoyama, Y.; Gotch, M.; Ino, Y.; Sakamoto, M.; Kato, K.; Hirohashi, S.
Jpn. J. Cancer Res. 82, 1263-1270, 1991
A/Title: Characterization of high-molecular-mass forms of basic fibroblast growth factor

rctinogenesis.
 A:Reference number: A54316; MUID:92091228; PMID:1721615
 A:Accession: A54316
 A:Molecule type: protein
 A:Residues: 'XX', 86-88, 'X', 90-91, 'X', 93-95 <SH3>
 A:Note: Experimental source: C-1421 hepatocellular carcinoma cell line
 A:Note: sequence extracted from NCBI backbone (NCBI:71595)
 A:Accession: B54316
 A:Molecule type: protein
 A:Residues: 'XXX', 19, 'X', 21-29 <SH2>
 A:Note: sequence extracted from NCBI backbone (NCBI:71594)
 A:Note: Experimental source: C-1421 hepatocellular carcinoma cell line
 A:Note: sequence extracted from NCBI backbone (NCBI:71595)
 A:Cell Biol. 109, 3105-3114, 1989
 J:Feig, J.J.; Bradley, J.D.; Fryburg, K.; Farris, J.; Cousens, L.C.; Barr, P.J.; Baird, R.
 A:Title: Differential effects of heparin, fibronectin, and laminin on the phosphorylation
 A:Reference number: A33624; MUID:90078343; PMID:2592418
 A:Accession: A33624
 A:Molecule type: protein
 A:Status: preliminary
 A:Molecule type: protein
 A:Residues: 57-210 <FEI>
 R:Story, M.T.; Esch, F.; Shimazaki, S.; Sasse, J.; Jacobs, S.C.; Lawson, R.K.
 Biochem. Biophys. Res. Commun. 142, 702-709, 1987
 A:Title: Amino-terminal sequence of a large form of basic fibroblast growth factor isolate
 A:Reference number: A25824; MUID:87156686; PMID:2435284
 A:Accession: A25824
 A:Molecule type: protein
 A:Residues: 57-77 <STO>
 A:Experimental source: prostate
 R:Gomez-Gallardo, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 135, 541-548, 1986
 A:Title: Human brain-derived acidic and basic fibroblast growth factors: amino terminal
 A:Reference number: A90122; MUID:86186784; PMID:3964259
 A:Accession: B24243
 A:Molecule type: protein
 A:Residues: 65-102, 'X', 104-105 <GIN>
 A:Experimental source: brain
 R:Gautechi, P.; Prater-Schroder, M.; Bohlen, P.
 FEBS Lett. 204, 203-207, 1986
 A:Title: Partial molecular characterization of endothelial cell mitogens from human brain
 A:Reference number: A91364; MUID:86275260; PMID:3732516
 A:Accession: B24301
 A:Molecule type: protein
 A:Residues: 65-88, 'X', 90-98, 'X', 100 <GAU>
 R:Sommer, A.; Brewer, M.T.; Thompson, R.C.; Moscatelli, D.; Presta, M.; Rifkin, D.B.
 Biochem. Biophys. Res. Commun. 144, 543-550, 1987
 A:Title: A form of human basic fibroblast growth factor with an extended amino terminus.
 A:Reference number: S42242; MUID:87213238; PMID:357930
 A:Accession: S42242
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 54-210 <SOM>
 A:Cross-references: EMBL:M17599; NID:G183086; PIDN:AAA52534.1; PID:G183087
 R:Pantoliano, M.W.; Horlick, R.A.; Springer, B.A.; Van Dyk, D.E.; Tobey, T.; Wetmore, D.
 Biochemistry 33, 10229-10248, 1994
 A:Title: Multivalent ligand-receptor binding interactions in the fibroblast growth factor
 A:Reference number: A55784; MUID:94347757; PMID:7528751
 A:Accession: B55784
 A:Molecule type: protein
 A:Residues: 54-71 <PAN>
 R:Watson, R.; Anthony, F.; Pickett, M.; Lambden, P.; Masson, G.M.; Thomas, E.J.
 Biochem. Biophys. Res. Commun. 187, 1227-1231, 1992
 A:Title: Reverse transcription with nested polymerase chain reaction shows expression of
 A:Reference number: 152267; MUID:93038590; PMID:1417798
 A:Accession: 152267
 A:Status: preliminary; translated from GB/EMBL/DDBJ
 A:Molecule type: mRNA
 A:Residues: 95-182 <RBS>
 A:Cross-references: GB:S47380; NID:G256535; PIDN:AA113653.1; PID:G4261553
 A:Experimental source: granulosa cells
 R:Parry, V.; Buglier, B.; Amalric, F.; Prone, J.C.; Prats, H.
 FEBS Lett. 349, 23-28, 1994
 A:Title: Purification and characterization of the 210-amino acid recombinant basic fibro
 A:Reference number: S46253; MUID:94320639; PMID:8045296

A:Accession: S46253
 A:Molecule type: protein
 A:Residues: 39-53;65-88 <PAT>
 A:Note: recombinant gene expressed in Escherichia coli
 C:Genetics:
 A:Gene: GDB:FGF2; FGFB
 A:Cross-references: GDB:119910; OMIM:134920
 A:Map position: 4q25-4q27
 A:Start codon: CNG
 C:Superfamily: fibroblast growth factor
 C:Keywords: alternative initiators; angiogenesis; growth factor; heparin binding; mitoge
 F:1-210/Product: basic fibroblast growth factor, 22.5k form #status predicted <NA2>
 F:65-210/Product: basic fibroblast growth factor, 18k form #status predicted <NA2>
 F:82-86/Region: heparin binding #status predicted
 F:11-174/Region: heparin binding #status predicted
 Query Match 100.0%; Score 826; DB 2; Length 210;
 Best Local Similarity 100.0%; Pred. No. 3.8e-74;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MAASITTLPLPDPDGSAGFPFGHFKDPKRYCKNGFELRHPDGRVGVREKSPHI 60
 DB 56 MAASITTLPLPDPDGSAGFPFGHFKDPKRYCKNGFELRHPDGRVGVREKSPHI 115
 QY 61 KLQQAEEGVVSIKGVCAKRYLAKMEDGRLASKCYTDCFFERLESNNVYTRSRKY 120
 DB 116 KLQQAEEGVVSIKGVCAKRYLAKMEDGRLASKCYTDCFFERLESNNVYTRSRKY 175
 QY 121 TSWYVALKRTQGYKLGSKTGPQKAILFLPMSAKS 155
 DB 176 TSWYVALKRTQGYKLGSKTGPQKAILFLPMSAKS 210
 RESULT 2
 GEXOB
 basic fibroblast growth factor precursor - bovine (fragment)
 N:Alternate names: bFGF; kidney-derived growth factor; prostatiotin
 C:Species: Bos primigenius taurus (cattle)
 C:Date: 13-Aug-1986 #sequence revision 02-Jun-1995 #text change 24-Nov-1999
 C:Accession: A24663; A32878; A33784; A61550; A60310; A61094; A01366; A60316; A2
 Science 233, 545-548, 1986
 R:Adrian, J.A.; Whang, J.L.; Tumbolo, A.; Friedman, J.; Hjertild, K.A.; Goe
 A:Title: Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic f
 A:Reference number: A94290; MUID:86261806; PMID:2425435
 A:Accession: A24663
 A:Molecule type: mRNA
 A:Residues: 3-157 <ABR>
 A:Cross-references: GB:M13440; NID:G163049; PIDN:AAA30518.1; PID:G163050
 A:Experimental source: pituitary gland
 R:Abraham, J.A.; Whang, J.L.; Tumbolo, A.; Mergia, A.; Fiddes, J.C.
 Cold Spring Harb. Symp. Quant. Biol. 51, 657-668, 1986
 A:Title: Human basic fibroblast growth factor: nucleotide sequence, genomic organization
 A:Reference number: A90924; MUID:87217066; PMID:3472745
 A:Accession: A32878
 A:Molecule type: mRNA
 A:Residues: 3-157 <AB2>
 R:Miller, P.G.; Li, Y.S.; Hoffman, R.M.; Kodner, C.M.; Siegel, N.R.; Deuel, T.F.
 Biochem. Biophys. Res. Commun. 165, 1096-1103, 1989
 A:Title: A novel 17 kD heparin-binding growth factor (HBGF-8) in bovine uterus: purific
 A:Reference number: A33784; MUID:90121211; PMID:2610682
 A:Accession: A33784
 A:Molecule type: protein
 A:Residues: 1-14 <ML>
 A:Note: demonstration of a possible alternative initiator or splice junction
 R:Bertolotti, J.; Hearn, M.T.W.
 Mol. Cell. Endocrinol. 51, 187-199, 1987
 A:Title: Isolation, characterisation and tissue localisation of an N-terminal-truncated
 A:Reference number: A61550; MUID:87247652; PMID:3556000
 A:Accession: A61550
 A:Molecule type: protein
 A:Residues: 16-35 <BER>
 R:Ueno, N.; Baird, A.; Esch, F.; Ling, N.; Guillemin, R.
 Mol. Cell. Endocrinol. 49, 189-194, 1987

1. Title: Isolation and partial characterization of basic fibroblast growth factor from
A:Reference number: A61551; MUID:87162856; PMID:3556754
A:Accession: A61551
A:Molecule type: protein
A:Residues: 27-35,'X',37-41 <UB3>
A:Experimental source: testes
A>Note: this form appears to be identical to the renal form
R:Ueno, N.; Baird, A.; Esch, F.; Shimasaki, S.; Ling, N.; Guillemin, R.
Regul. Pept. 16, 135-145, 1986
A:Title: Purification and partial characterization of a mitogenic factor from bovine liv
A:Reference number: A60310; MUID:87119165; PMID:3809608
A:Accession: A60310
A:Molecule type: protein
A:Residues: 23-35,'X',37-42 <UN>
A:Experimental source: liver
R:Ueno, N.; Baird, A.; Esch, F.; Ling, N.; Guillemin, R.
Biochem. Biophys. Res. Commun. 138, 580-588, 1986
A:Title: Isolation of an amino terminal extended form of basic fibroblast growth factor.
A:Contents: annotation
A:Reference number: A24819; MUID:86295737; PMID:3741423
A>Note: the amino end of this form was blocked, the peptide composition matched what was
R:Gospodarowicz, D.; Baird, A.; Cheng, J.; Lui, G.M.; Esch, F.; Bohlen, P.
Endocrinology 118, 82-90, 1986
A:Title: Isolation of fibroblast growth factor from bovine adrenal gland: physicochemica
A:Reference number: A61094; MUID:86081530; PMID:3940857
A:Accession: A61094
A:Molecule type: protein
A:Residues: 12-25,27-35,'X',37-40 <GOS>
A:Experimental source: adrenal gland
R:Esch, F.; Baird, A.; Ling, N.; Ueno, N.; Hill, F.; Denoroy, L.; Klepper, R.; Gospodarc
Proc. Natl. Acad. Sci. U.S.A. 82, 6507-6511, 1985
A:Title: Primary structure of bovine pituitary basic fibroblast growth factor (FGF) and
A:Reference number: A01386; MUID:86016731; PMID:3863109
A:Accession: A01386
A:Molecule type: protein
A:Residues: 12-157 <BSC>
A:Experimental source: pituitary gland
R:Baird, A.; Esch, F.; Bohlen, P.; Ling, N.; Gospodarowicz, D.
Regul. Pept. 12, 201-213, 1985
A:Title: Isolation and partial characterization of an endothelial cell growth factor from
A:Reference number: A60316; MUID:86095426; PMID:4081126
A:Accession: A60316
A:Molecule type: protein
A:Residues: 27-35,'X',37-43 <BA1>
A:Experimental source: kidney
R:Bohlen, P.; Baird, A.; Esch, F.; Ling, N.; Gospodarowicz, D.
Proc. Natl. Acad. Sci. U.S.A. 81, 5364-5368, 1984
A:Title: Isolation and partial molecular characterization of pituitary fibroblast growth
A:Reference number: A22054; MUID:84298139; PMID:6591194
A:Accession: A22054
A:Molecule type: protein
A:Residues: 12-26 <BOH>
C:Comment: The acidic and basic fibroblast growth factors are the major endothelial-cell
cell types in vitro (although bFGF is 30-100 times more potent than aFGF in stimulating t
C:Comment: This protein binds heparin more strongly than does aFGF.
C:Keywords: alternative splicing; angiogenesis; blocked amino end; growth factor; heparin
C:Superfamily: fibroblast growth factor
F:1-157/Product: basic fibroblast growth factor, uterine form #status predicted <MAT1>
F:12-157/Product: basic fibroblast growth factor, pituitary gamma form #status experiment
F:16-157/Product: basic fibroblast growth factor, pituitary alpha form #status experiment
F:23-157/Product: basic fibroblast growth factor, pituitary short form #status predicted
F:27-157/Product: basic fibroblast growth factor, hepatic form #status experimental <MAT6>
F:29-33,118-121/Region: heparin binding #status predicted
F:4/Modified site: blocked amino end (Aa) (in mature form pituitary gamma) (probably ad

```

Oy      61 KLOQAEEGVASTKGCANRYLANKEDGRLLASKCVDCECFPERLESNNNTYRSRKY 120
       :|||||
Db      63 KLOQAEEGVASTKGCANRYLANKEDGRLLASKCVDCECFPERLESNNNTYRSRKY 122

Oy      121 TSWVALKRTGYKLGSKTGPQOKAILEFLPMSAKS 155
       :|||||
Db     123 SSWVALKRTGYKLGSKTGPQOKAILEFLPMSAKS 157

RESULT 3
basic fibroblast growth factor precursor - rat
A31674
N:Alternate names: bFGF
C:Species: Rattus norvegicus (Norway rat)
C>Date: 21-May-1990 #sequence_revision 21-May-1990 #text_change 16-Jul-1999
C:Accession: A31674; S00876; S24309
R:Shimazaki, S.; Emoco, N.; Kobayashi, A.; Mercado, M.; Shibata, F.; Cooksey, K.; Baird, A.;
Biochem. Biophys. Res. Commun. 157, 256-263, 1988
A>Title: Complementary DNA cloning and sequencing of rat ovarian basic fibroblast growth]
A:Reference number: A31674; MUID:89061721; PMID:3196337
A:Accession: A31674
A:Molecule type: mRNA
A:Residues: 1-154 <SR>
A:Cross-references: GB:1024247; NID:g204285; PIDN:AAA41210.1; PID:g204286
R:Kurukawa, T.; Seno, M.; Igarashi, K.
Nucleic Acids Res. 16, 5201-1988
A>Title: Nucleotide sequence of rat basic fibroblast growth factor cDNA.
A:Reference number: S00876; MUID:88262516; PMID:3387225
A:Accession: S00876
A:Molecule type: mRNA
A:Residues: 1-154 <KR>
A:Cross-references: EMBL:X07285; NID:g56203; PIDN:CAA30265.1; PID:g56204
R:EL-Husseini, A.E.D.; Paterson, J.A.; Wyal, Y.; Shiu, R.P.C.
Biochim. Biophys. Acta 1131, 314-316, 1992
A>Title: PCR detection of the rat brain basic fibroblast growth factor (bFGF) mRNA cont
A:Reference number: S24309; MUID:92329546; PMID:1378302
A:Accession: S24309
A>Status: preliminary; translation not shown
A:Molecule type: mRNA
A:Residues: 35-154 <EH>
A:Cross-references: EMBL:X61697; NID:g56143; PIDN:CAA43863.1; PID:g56144
C:Superfamily: fibroblast growth factor
C:Keywords: growth factor
F.1-9/Domains: signal sequence #status predicted <Sig>
F.10-154/Product: basic fibroblast growth factor #status predicted <Mat>

Query Match          96.7%; Score 798.5; DB 2; Length 154;
Best Local Similarity 96.8%; Pred. No. 1,4e-71;
Matches 150; Conservative 4; Mismatches 0; Indels 1; Gaps 1;

Oy      1 MAAGSTTLPALPEGGGASPPGHFKDPRKRLYCKNGGFLLRHDPGRVGVREKSDPHI 60
       :|||||
Db      1 MAAGSTITSPALPEGGG-GAPPGHFKDPRKRLYCKNGGFLLRHDPGRVGVREKSDPHV 59

Oy      61 KLOQAEEGVASTKGCANRYLANKEDGRLLASKCVDCECFPERLESNNNTYRSRKY 120
       :|||||
Db      60 KLOQAEEGVASTKGCANRYLANKEDGRLLASKCVDCECFPERLESNNNTYRSRKY 119

Oy      121 TSWVALKRTGYKLGSKTGPQOKAILEFLPMSAKS 155
       :|||||
Db     120 SSWVALKRTGYKLGSKTGPQOKAILEFLPMSAKS 154

RESULT 4
C37360
basic fibroblast growth factor - mouse
C:Species: Mus musculus (house mouse)
C>Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 16-Jul-1999
C:Accession: C37360
R:Hebert, J.M.; Basalito, C.; Goldfarb, M.; Haub, O.; Martin, G.R.
Dev. Biol. 138, 454-463, 1990
A>Title: Isolation of cDNAs encoding four mouse FGF family members and characterization

```

A:Reference number: A37360; MUID:90201563; PMID:2318343
 A:Accession: C37360
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-154 <HEB>
 A:Cross-references: GB:M30644; NID:G193296; PIDN:AAA37621.1; PID:G309239
 C:Superfamily: fibroblast growth factor

Query Match 94.9%; Score 783.5; DB 2; Length 154;
 Best Local Similarity 94.8%; Pred. No. 4.3e-70;
 Matches 147; Conservative 5; Mismatches 2; Indels 1; Gaps 1;

QY 1 MAAGSITLPLPEDGGGAFPPGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHI 60
 DB 1 MAAGSITLPLPEDGGA-APPGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHV 59
 QY 61 KLOLAERGVVISIKGVANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRK 120
 DB 60 KLOLAERGVVISIKGVANRYLAMKEDGRLLASKCVTECFPERLESNNYNTYRSRK 119
 QY 121 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 DB 120 TSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 154

RESULT 5

basic fibroblast growth factor - sheep

N:Alternate names: prostactropin
 C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
 C>Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
 C:Accession: S00185
 R:Simpson, R.J.; Moritz, R.L.; Lloyd, C.J.; Fabril, L.J.; Nice, E.C.; Rudira, M.R.; Burge
 FEBS Lett. 224, 128-132, 1987
 A:Title: Primary structure of ovine pituitary basic fibroblast growth factor.
 A:Reference number: S00185; MUID:88055577; PMID:3678486
 A:Accession: S00185
 A:Molecule type: protein
 A:Residues: 1-146 <SIM>
 C:Superfamily: fibroblast growth factor
 C:Keywords: growth factor; heparin binding; mitogen
 F:18-22/Region: heparin binding #status predicted
 F:107-110/Region: heparin binding #status predicted

Query Match 93.2%; Score 770; DB 1; Length 146;
 Best Local Similarity 97.9%; Pred. No. 8.6e-69;
 Matches 143; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 10 PALPEDGGGAFPPGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHIKLOLAER 69
 DB 1 PALPEDGGGSAFPFGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHIKLOLAER 60
 QY 70 GVSIVGVANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRKYSWYVALKR 129
 DB 61 GVSIVGVANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRKYSWYVALKR 120
 QY 130 TGOYKLGSKTGPQKAILFLPMSAKS 155
 DB 121 TGOYKLGSKTGPQKAILFLPMSAKS 146

RESULT 6

S31622

basic fibroblast growth factor - short-tailed opossum (Monodelphis domestica) (fragment)
 C:Species: Monodelphis domestica
 C>Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 12-Apr-1995
 C:Accession: S31622

R:Kusevitz, D.F.; Sabourin, C.L.K.; Budge, C.L.; Lay, R.D.

submitted to the EMBL Data Library, September 1992
 A:Description: Characterization of cDNA encoding basic fibroblast growth factor of the m

A:Reference number: S31622
 A:Accession: S31622
 A:Status: preliminary

A:Molecule type: DNA
 A:Residues: 1-164 <KUS>
 A:Cross-references: EMBL:Z15154
 C:Superfamily: fibroblast growth factor

Query Match 92.1%; Score 760.5; DB 2; Length 164;
 Best Local Similarity 92.9%; Pred. No. 8.6e-68;
 Matches 145; Conservative 5; Mismatches 5; Indels 1; Gaps 1;

QY 1 MAAGSITLPLPED-GGGSAFPFGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHI 59
 DB 9 MAAGSITLPLPSGDDGGGAFPPGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHI 68
 QY 60 IKLOLAERGVVISIKGVANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRK 119
 DB 69 IKLOLAERGVVISIKGVANRYLAMKEDGRLLASKCVTECFPERLESNNYNTYRSRK 128
 QY 120 YTSWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 DB 129 YSNWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 164

RESULT 7

basic fibroblast growth factor - chicken

A:Accession: A48834
 C:Species: Gallus gallus (chicken)
 C>Date: 01-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 16-Jul-1999
 C:Accession: A48834; S23636
 R:Bojia, A.Z.; Meijers, C.; Zeller, R.
 Dev. Biol. 157, 110-118, 1993
 A:Title: Expression of alternatively spliced bFGF first coding exons and antisense mRNA.
 A:Reference number: A48834; MUID:93246053; PMID:7683281
 A:Accession: A48834

A:Status: preliminary
 A:Molecule type: nucleic acid
 A:Residues: 1-189 <BOR>
 A:Experimental source: embryo

A>Note: sequence extracted from NCBI backbone (NCBIN:131000, NCBI:131001)
 R:Miltrani, E.; Gruenbaum, Y.; Shohat, H.; Ziv, T.
 Development 109, 387-393, 1990

A:Title: Fibroblast growth factor during mesoderm induction in the early chick embryo.
 A:Reference number: S23636; MUID:90382254; PMID:2401202
 A:Accession: S23636

A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 95-128 <MIT>
 A:Cross-references: EMBL:X56804; NID:G62855; PIDN:CAA40139.1; PID:G62856
 C:Superfamily: fibroblast growth factor

Query Match 91.9%; Score 759; DB 2; Length 189;
 Best Local Similarity 92.2%; Pred. No. 1.4e-67;
 Matches 142; Conservative 5; Mismatches 7; Indels 0; Gaps 0;

QY 2 AAGSITLPLPEDGGGAFPPGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHI 61
 DB 36 AAGSITLPLPDGGAAPPFGHFKDPKRLYCKNGGFLLRIHPDGRVDGVRKSDPHI 95
 QY 62 LQLOAERGVVISIKGVANRYLAMKEDGRLLASKCVTDECFPERLESNNYNTYRSRK 121
 DB 96 LQLOAERGVVISIKGVANRYLAMKEDGRLLASKCVTECFPERLESNNYNTYRSRK 155
 QY 122 SWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155
 DB 156 DWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 189

RESULT 8

I46711

fibroblast growth factor - rabbit (fragment)
 C:Species: Oryctolagus cuniculus (domestic rabbit)
 C>Date: 14-Feb-1997 #sequence_revision 14-Feb-1997 #text_change 16-Jul-1999
 C:Accession: I46711
 R:Winkles, J.A.; Friesel, R.; Alberts, G.F.; Janat, M.F.; Liao, G.

Am. J. Pathol. 143, 518-527, 1993
A/Title: Elevated expression of basic fibroblast growth factor in an immortalized rabbit
A/Reference number: 146711; MUID:93343209; PMID:8342559
A/Accession: 146711
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-137 <MIN>
A/Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A/Reference number: GB:112034; NID:g165014; PIDN:AAA31248.1; PID:g165015
C/Superfamily: fibroblast growth factor

Query Match 89.3%; Score 738; DB 2; Length 137;
Best Local Similarity 99.3%; Pred. No. 1,2e-65;
Matches 136; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 10 PALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHIKLOLAER 69
DB 1 PALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHIKLOLAER 60
QY 70 GVSIVKVCANRYLAMKEDGRLASKCVTDCEFFERLESNNVTYSRKYTSWVALKR 129
DB 61 GVSIVKVCANRYLAMKEDGRLASKCVTDCEFFERLESNNVTYSRKYTSWVALKR 120
QY 130 TGOYKLGSKTGPQKAI 146
DB 121 TGOYKLGSKTGPQKAI 137

RESULT 9

4A0117
basic fibroblast growth factor - African clawed frog

C/Species: Xenopus laevis (African clawed frog)
C/Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
A/Accession: A40117; A29618
R/Kimelman, D.; Abraham, J.A.; Haaparanta, T.; Palisi, T.M.; Kirschner, M.W.
Science 242, 1053-1056, 1998
A/Title: The presence of fibroblast growth factor in the frog egg: its role as a natural
A/Reference number: A40117; MUID:99058621; PMID:3194757
A/Accession: A40117
A/Status: preliminary
A/Molecule type: mRNA
A/Residues: 1-155 <KIM>
A/Cross-References: GB:M18067; NID:g214177; PIDN:AAA49726.1; PID:g214178; GB:M21092
R/Kimelman, D.; Kirschner, M.
Cell 51, 869-877, 1987
A/Title: Synergistic induction of mesoderm by FGF and TGF-beta and the identification of
A/Reference number: A29618; MUID:88052890; PMID:3479265
A/Accession: A29618
A/Molecule type: mRNA
A/Residues: 95-110,112-155 <K12>
C/Superfamily: fibroblast growth factor
C/Keywords: growth factor

Query Match 83.2%; Score 687; DB 1; Length 155;
Best Local Similarity 83.9%; Pred. No. 1.5e-60;
Matches 130; Conservative 9; Mismatches 16; Indels 0; Gaps 0;

QY 1 MAASITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
DB 1 MAASITTLPLESDGSGTTPSPGSPKPKRLYCKNGGFFLRINSRGVDSRDKSDSHI 60
QY 61 KLOLAERGVVSIKGYCANRYLAMKEDGRLASKCVTDCEFFERLESNNVTYSRKY 120
DB 61 KLOLAERGVVSIKGYCANRYLAMKEDGRLASKCVTDCEFFERLESNNVTYSRKY 120
QY 121 TSWVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSWVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155

RESULT 10
A32484
basic fibroblast growth factor precursor, 25k - guinea pig (fragments)
C/Species: Cavia porcellus (guinea pig)

C/Date: 20-Oct-1989 #sequence_revision 20-Oct-1989 #text_change 15-Jun-1996
C/Accession: A32484
R/Sommer, A.; Moscatelli, D.; Rifkin, D.B.
Biochem. Biophys. Res. Commun. 160, 1267-1274, 1989
A/Title: An amino-terminally extended and post-translationally modified form of a 25kD b
A/Reference number: A32484; MUID:89273588; PMID:2730645
A/Accession: A32484
A/Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A/Molecule type: mRNA
A/Residues: 1-125 <SOM>
C/Superfamily: fibroblast growth factor

Query Match 56.7%; Score 468.5; DB 2; Length 125;
Best Local Similarity 63.2%; Pred. No. 4.4e-39;
Matches 98; Conservative 2; Mismatches 4; Indels 51; Gaps 3;

QY 1 MAASITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
DB 22 MAASITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 57
QY 61 KLOLAERGVVSIKGYCANRYLAMKEDGRLASKCVTDCEFFERLESNNVTYSRKY 120
DB 58 -LQLOAEDR-----CVTDCFFERLESNNVTYSRKY 90
QY 121 TSWVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 91 TSWVALKRTGOYKLGSKTGPQKAILFLPMSAKS 125

RESULT 11

A60721
acidic fibroblast growth factor - golden hamster
N/Alternate names: heparin-binding growth factor 1
C/Species: Mesocricetus auratus (golden hamster)
C/Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
A/Accession: A60721
R/Hall, J.A.; Harris, M.A.; Malark, M.; Mansson, P.E.; Zhou, H.; Harris, S.E.
J. Cell. Biochem. 43, 17-26, 1990
A/Title: Characterization of the hamster DDT-1 cell aFGF/HGPF-I gene and cDNA and its mo
A/Reference number: A60721; MUID:90270291; PMID:1693366
A/Accession: A60721
A/Status: not compared with conceptual translation
A/Molecule type: DNA
A/Residues: 1-155 <HAL>
C/Superfamily: fibroblast growth factor
C/Keywords: growth factor, heparin binding

Query Match 50.7%; Score 418.5; DB 1; Length 155;
Best Local Similarity 54.8%; Pred. No. 4.9e-34;
Matches 86; Conservative 16; Mismatches 50; Indels 5; Gaps 2;

QY 1 MAASITTLPALPEDGSGAFPPGHFKDPKRLYCKNGGFFLRHPDGRVDGVRKSDPHI 60
DB 1 MAASITTLPSLTERRN--LPENYKPKRLYCKNGGFFLRHPDGRVDGTRDRSDPHI 57
QY 61 KLOLAERGVVSIKGYCANRYLAMKEDGRLASKCVTDCEFFERLESNNVTYSRKY 120
DB 58 QLOLAERGVVSIKGYCANRYLAMKEDGRLASKCVTDCEFFERLESNNVTYSRKY 117
QY 121 T--SWVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 118 AEKMFVGLKKNKSGCKRGPRTHYGOKAILFLPVS 154

RESULT 12
A60130
acidic fibroblast growth factor - chicken
N/Alternate names: endocervical cell growth factor
C/Species: Gallus gallus (chicken)
C/Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 16-Jul-1999
A/Accession: A60130; S07639
R/Schmuerch, H.; Risau, W.
Development 111, 1143-1154, 1991

A>Title: Differentiating and mature neurons express the acidic fibroblast growth factor
 A/Accession: A60130; MUID:91347925; PMID:1715259
 A/Status: preliminary
 A/Molecule type: mRNA
 A/Residues: 1-155 <SCG>
 A/Cross-references: GB:S63263; NID:G234372; PIDN:AB19629.1; PID:G234373
 R:Rau, W.; Gautschi-Sova, P.; Boehlen, P.
 EMO J. 7, 959-962, 1988
 A>Title: Endothelial cell growth factors in embryonic and adult chick brain are related
 A/Reference number: 502639; MUID:88296438; PMID:3402441
 A/Accession: S02639
 A/Molecule type: protein
 A/Residues: 22-30 'X', 32-44 'X', 46-48 <RIS>
 C/Superfamily: fibroblast growth factor
 C/Keywords: growth factor

Query Match 49.7%; Score 410.5; DB 2; Length 155;
 Best Local Similarity 54.9%; Pred. No. 3e-33;
 Matches 84; Conservative 20; Mismatches 44; Indels 5; Gaps 2;

QY 1 MAAGITTLPALPEDGSGAPPGHFKDPKRLYCCKGFFLHHPDGRVDGVRKSDPHI 60
 Db 1 MAEGITFTALTRFG--LPLGVYKKFKLLYCSNGHFRLILPDGKVDGTRSDPHI 57
 QY 61 KLOLAERGVVSIKGVCMRYLAKMDGRLLAKCVTDECFPFERLENNNTYRSRY 120
 Db 58 OLQLEADVEGYIKSTASGOYLMDTNGLLYGSQDPGESECFLEENHNNTYISKH 117

QY 121 T--SWYVALKRTGYKLGSKTGPQKAILFLPM 151
 Db 118 ADKNWFLGKKNKNSKLGERTHYGKAILFLPL 150

RESULT 13
 A33665
 A/Accession: A33665
 A/Molecule type: DNA
 A/Residues: 1-155 <MER>
 A/Cross-references: GB:M30491
 R:Wang, W.P.; Lehtoma, K.; Varban, M.L.; Krishnan, I.; Chiu, I.M.
 Mol. Cell. Biol. 9, 2387-2395, 1989
 A>Title: Cloning of the gene coding for human class I heparin-binding growth factor and
 A/Reference number: A32316; MUID:89343957; PMID:2474753
 A/Accession: A32316
 A/Molecule type: DNA
 A/Residues: 1-155 <WAN>
 A/Cross-references: GB:M23087; NID:G183875; PIDN:AAA52638.1; PID:G386768
 R:Wang, W.P.; Quick, D.; Balcerzak, S.P.; Needleman, S.W.; Chiu, I.M.
 Oncogene 6, 1521-1529, 1991
 A>Title: Cloning and sequence analysis of the human acidic fibroblast growth factor gene
 A/Reference number: S18217; MUID:92019819; PMID:1717925
 A/Accession: S18217
 A/Molecule type: DNA
 A/Residues: 1-155 <WA2>
 A/Cross-references: EMBL:M23086
 R:Chiu, I.M.; Wang, W.P.; Lehtoma, K.
 Oncogene 5, 755-762, 1990
 A>Title: Alternative splicing generates two forms of mRNA coding for human heparin-binding
 A/Reference number: A43804; MUID:90265618; PMID:1693186
 A/Accession: A43804
 A/Molecule type: mRNA
 A/Residues: 1-155 <CHI>
 A/Cross-references: EMBL:X51943; NID:G32435; PIDN:CAA36206.1; PID:G32436

R:Jaye, M.; Hawk, R.; Burgess, W.; Ricca, G.A.; Chiu, I.M.; Ravera, M.W.; O'Brien, S.J.
 Science 233, 541-545, 1986
 A>Title: Human endothelial cell growth factor: cloning, nucleotide sequence, and chromo-
 A/Reference number: A24662; MUID:86261805; PMID:3523756
 A/Accession: A24662
 A/Molecule type: mRNA
 A/Residues: 1-155 <JAY>
 A/Cross-references: GB:M13361; NID:G181941; PIDN:AAA79245.1; PID:G181942
 R:Yu, Y.L.; Kna, H.; Golden, J.A.; Mischel, A.A.; Goertl, E.J.; Turck, C.W.
 J. Exp. Med. 175, 1073-1080, 1992
 A>Title: An acidic fibroblast growth factor protein generated by alternate splicing act.
 A/Reference number: JH0707; MUID:92202857; PMID:1372643
 A/Accession: JH0707
 A/Molecule type: mRNA
 A/Residues: 1-155 <YUY>
 A/Cross-references: GB:X65778; NID:G396163; PIDN:CAA46661.1; PID:G396164
 R:Payson, R.A.; Canatan, H.; Chotani, M.A.; Wang, W.P.; Harris, S.E.; Myers, R.L.; Chiu
 Nucleic Acids Res. 21, 489-495, 1993
 A>Title: Cloning of two novel forms of human acidic fibroblast growth factor (afgf) mRN
 A/Reference number: S35535; MUID:93181239; PMID:7680120
 A/Accession: S35535
 A/Status: translation not shown
 A/Molecule type: mRNA
 A/Residues: 1-58 <PAY>
 A/Cross-references: GB:L01485
 A/Accession: S35536
 A/Status: translation not shown
 A/Molecule type: mRNA
 A/Residues: 1-58 <PA2>
 A/Cross-references: GB:L01487
 R:Crumley, G.; Dionne, C.A.; Jaye, M.
 Biochem. Biophys. Res. Commun. 171, 7-13, 1990
 A>Title: The gene for human acidic fibroblast growth factor encodes two upstream exons
 A/Reference number: I39412; MUID:90365758; PMID:2353407
 A/Accession: I39413
 A/Status: translation not shown
 A/Molecule type: mRNA
 A/Residues: 1-40 <RES>
 A/Cross-references: GB:M60515; NID:G178226; PIDN:AAA51672.1; PID:G553170; GB:M60516; NI
 R:Harper, J.W.; Strydom, D.J.; Lobd, R.R.
 Biochemistry 25, 4097-4103, 1986
 A/Reference number: A23553; MUID:86296647; PMID:2427112
 A/Accession: A23553
 A/Molecule type: protein
 A/Residues: 16-155 <HR>
 R:Gimenez-Galligo, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 138, 611-617, 1986
 A>Title: The complete amino acid sequence of human brain-derived acidic fibroblast grow
 A/Reference number: A24820; MUID:86295741; PMID:33527167
 A/Accession: A24820
 A/Molecule type: protein
 A/Residues: 16-155 <GIM>
 R:Gimenez-Galligo, G.; Conn, G.; Hatcher, V.B.; Thomas, K.A.
 Biochem. Biophys. Res. Commun. 135, 541-548, 1986
 A>Title: Human brain-derived acidic and basic fibroblast growth factors: amino terminal
 A/Reference number: A30122; MUID:86186784; PMID:3366255
 A/Accession: A24243
 A/Molecule type: protein
 A/Residues: 16-47 <GIZ>
 A/Experimental source: brain
 R:Gautschi, P.; Frater-Schroder, M.; Bohlen, P.
 FEBS Lett. 204, 203-207, 1986
 A>Title: Partial molecular characterization of endothelial cell mitogens from human bra
 A/Reference number: A91364; MUID:86275260; PMID:3732516
 A/Accession: A24301
 A/Molecule type: protein
 A/Residues: 16-30 'X', 32-49 <GAN>
 R:Gautschi-Sova, P.; Muller, T.; Bohlen, P.
 Biochem. Biophys. Res. Commun. 140, 874-880, 1986
 A>Title: Amino acid sequence of human acidic fibroblast growth factor.
 A/Reference number: A26386; MUID:87048871; PMID:3778488
 A/Accession: A26386
 A/Molecule type: protein

A:Residues: 16-155 <GA2>
 A:Experimental source: brain
 R.Chavan, A.J.; Haley, B.E.; Volkin, D.B.; Marfia, K.E.; Verticelli, A.M.; Bruner, M.W.;
 Biochemistry 33, 7193-7202, 1994
 A:Title: Interaction of nucleotides with acidic fibroblast growth factor (FGF-1).
 A:Reference number: A53639; MUID:94271773; PMID:7516183
 A:Accession: A53639
 A:Molecule type: protein
 A:Residues: 16-30, 'X', 32-38, 73-75, 'X', 77-97, 'X', 99-101, 128-131, 'X', 133-140, 'X', 142-152
 C:Genetics:
 A:Gene: GDB:FGF1; FGFA
 A:Cross-references: GDB:119909; OMIM:131220
 A:Map position: 5q31.3-5q33.2
 A:Introns: 57/1, 91/3
 C:Superfamily: fibroblast growth factor
 C:Keywords: alternative splicing; growth factor; heparin binding
 F:16-155/Product: fibroblast growth factor 1 #status experimental <MAT>
 F:129/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 49.0%; Score 409.5; DB 1; Length 155;

Best Local Similarity 54.1%; Pred. No. 3.8e-33;

Matches 85; Conservative 16; Mismatches 51; Indels 5; Gaps 2;

QY 1 MAAGSTTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDVREKSDPHI 60

DB 1 MAGEITTFPALTEKRN--LPPGNVKKPKLLYCSNGHFLRLIPDGTVDGTRDRSDOH 57

QY 61 KLOLAERGVVSIKVCANRYLAMKEDGRLASCVTDECFPEERLESNNVNTYRSRKY 120

DB 58 QLOLSAESGEVYIKETGQYLLAMDTGILYSGQTNEECFLERLENHNTYTSKSH 117

QY 121 T--SWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 118 AEKNWFVGLKKNKSGCKRGPRTHYGQKAILFLPLPVSS 154

RESULT 14

S04147

acidic fibroblast growth factor 1 - rat

N:Alternate names: heparin-binding growth factor 1

C:Species: Rattus norvegicus (Norway rat)

C:Date: 28-Feb-1990 #sequence, revision 28-Feb-1990 #text_change 16-Jul-1999

C:Accession: S04147

R:Goodrich, S.P.; Yan, G.C.; Bahrenburg, K.; Mansson, P.E.

Nucleic Acids Res. 17, 2867, 1989

A:Title: The nucleotide sequence of rat heparin binding growth factor 1 (HBGF-1).

A:Reference number: S04147; MUID:89240051; PMID:2470029

A:Accession: S04147

A:Molecule type: mRNA

A:Residues: 1-155 <GCO>

A:Cross-references: EMBL:X14232; NID:956351; PIDN:CAA32448.1; PID:G56352

C:Superfamily: fibroblast growth factor

C:Keywords: growth factor; heparin binding

Query Match 49.0%; Score 404.5; DB 2; Length 155;

Best Local Similarity 53.5%; Pred. No. 1.2e-32;

Matches 84; Conservative 17; Mismatches 51; Indels 5; Gaps 2;

QY 1 MAAGSTTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDVREKSDPHI 60

DB 1 MAGEITTFPALTEKRN--LPPGNVKKPKLLYCSNGHFLRLIPDGTVDGTRDRSDOH 57

QY 61 KLOLAERGVVSIKVCANRYLAMKEDGRLASCVTDECFPEERLESNNVNTYRSRKY 120

DB 58 QLOLSAESGEVYIKETGQYLLAMDTGILYSGQTNEECFLERLENHNTYTSKSH 117

QY 121 T--SWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 118 AEKNWFVGLKKNKSGCKRGPRTHYGQKAILFLPLPVSS 154

RESULT 15

D37360

acidic fibroblast growth factor - mouse
 N:Alternate names: aFGF; FGF-1
 C:Species: Mus musculus (house mouse)
 C:Date: 17-Apr-1993 #sequence, revision 17-Apr-1993 #text_change 16-Jul-1999
 C:Accession: D37360; J05231
 R:Hebert, J.M.; Basilico, C.; Goldfarb, M.; Haub, O.; Martin, G.R.
 Dev. Biol. 138, 454-463, 1990
 A:Title: Isolation of cDNAs encoding four mouse FGF family members and characterization
 A:Reference number: A37360; MUID:90201563; PMID:2318343
 A:Accession: D37360
 A:Status: preliminary
 A:Molecule type: mRNA
 A:Residues: 1-155 <HEB>
 A:Cross-references: GB:M30641; NID:9193284; PIDN:AAA37618.1; PID:G309236
 R:Madadi, F.; Hackshaw, K.V.; Chiu, I.M.
 Gene 179, 231-236, 1996
 A:Title: Cloning and characterization of the mouse Fgf-1 gene.
 A:Reference number: J05231; MUID:97128312; PMID:8972905
 A:Accession: J05231
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-155 <MAD>
 A:Cross-references: GB:U36456
 C:Comment: This protein is an inducer of neovascularization in angiogenic disease includ:
 A:Gene: Fgf-1
 A:Introns: 57/1, 91/3
 C:Superfamily: fibroblast growth factor

Query Match 49.0%; Score 404.5; DB 2; Length 155;

Best Local Similarity 53.5%; Pred. No. 1.2e-32;

Matches 84; Conservative 17; Mismatches 51; Indels 5; Gaps 2;

QY 1 MAAGSTTLPALPEDGSGAFPFGHFKDPKRLYCKNGGFLRIHPDGRVDVREKSDPHI 60

DB 1 MAGEITTFPALTEKRN--LPPGNVKKPKLLYCSNGHFLRLIPDGTVDGTRDRSDOH 57

QY 61 KLOLAERGVVSIKVCANRYLAMKEDGRLASCVTDECFPEERLESNNVNTYRSRKY 120

DB 58 QLOLSAESGEVYIKETGQYLLAMDTGILYSGQTNEECFLERLENHNTYTSKSH 117

QY 121 T--SWYVALKRTGQYKLGSKTGPQKAILFLPMSAKS 155

DB 118 AEKNWFVGLKKNKSGCKRGPRTHYGQKAILFLPLPVSS 154

Search completed: December 16, 2002, 17:56:10

Job time : 15.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:54:01 ; Search time 8.5 Seconds

(without alignment)
756.333 Million cell updates/sec

Title: US-09-886-856-8

Perfect score: 826
Sequence: 1 MAAAGTTPALPEDGSGA.....GSKTGPCKAILFLPMASAKS 155

Scoring table: BLOSUM62
Gapop 10.0 , Capext 0.5

Searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Database: SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|------------|---------------------|
| 1 | 825 | 100.0 | 155 | FGF2_HUMAN | P09038 homo sapien |
| 2 | 817 | 98.9 | 155 | FGF2_BOVIN | P03966 bos taurus |
| 3 | 811 | 98.2 | 155 | FGF2_SHEEP | P20003 ovis aries |
| 4 | 798.5 | 96.7 | 154 | FGF2_RAT | P13109 rattus norv |
| 5 | 783.5 | 94.9 | 154 | FGF2_MOUSE | P15655 mus musculu |
| 6 | 760.5 | 92.1 | 156 | FGF2_MONDO | P48798 monodelphis |
| 7 | 759 | 91.9 | 158 | FGF2_CHICK | P48800 gallus gall |
| 8 | 738 | 89.3 | 137 | FGF2_RABIT | P48799 oryctolagus |
| 9 | 687 | 83.2 | 155 | FGF2_XENLA | P12226 xenopus lae |
| 10 | 418.5 | 50.7 | 155 | FGF1_MESAU | P14004 mesocricetu |
| 11 | 410.5 | 49.7 | 155 | FGF1_CHICK | P19596 gallus gall |
| 12 | 409.5 | 49.6 | 155 | FGF1_HUMAN | P05230 homo sapien |
| 13 | 404.5 | 49.0 | 155 | FGF1_MOUSE | P10935 mus musculu |
| 14 | 403.5 | 48.8 | 152 | FGF1_PIG | P20002 sus scrofa |
| 15 | 393.5 | 47.6 | 155 | FGF1_BOVIN | P03968 bos taurus |
| 16 | 265 | 32.1 | 194 | FGF4_BOVIN | P48804 gallus gall |
| 17 | 255.5 | 30.9 | 206 | FGF4_HUMAN | P08620 homo sapien |
| 18 | 253 | 30.6 | 256 | FGF3_BRAE | P48802 brachydantio |
| 19 | 251 | 30.4 | 220 | FGF3_CHICK | P48801 gallus gall |
| 20 | 250 | 30.3 | 208 | FGF6_MOUSE | P12658 mus musculu |
| 21 | 249 | 30.1 | 208 | FGF6_HUMAN | P10767 homo sapien |
| 22 | 248.5 | 30.1 | 206 | FGF4_BOVIN | P48803 bos taurus |
| 23 | 242.5 | 29.4 | 264 | FGF5_MOUSE | P15656 mus musculu |
| 24 | 242.5 | 29.4 | 266 | FGF5_RAT | P48807 rattus norv |
| 25 | 241.5 | 29.2 | 202 | FGF4_MOUSE | P11403 mus musculu |
| 26 | 239 | 28.9 | 187 | FGF4_XENLA | P48805 xenopus lae |
| 27 | 237.5 | 28.8 | 237 | FGF3_XENLA | P36386 xenopus lae |
| 28 | 237 | 28.7 | 245 | FGF3_MOUSE | P05524 mus musculu |
| 29 | 236 | 28.6 | 239 | FGF3_HUMAN | P11487 homo sapien |
| 30 | 234.5 | 28.4 | 192 | FGF8_XENLA | P48806 xenopus lae |
| 31 | 234 | 28.3 | 268 | FGF5_HUMAN | P12034 homo sapien |
| 32 | 217 | 26.3 | 208 | FGF9_HUMAN | P13171 homo sapien |
| 33 | 217 | 26.3 | 208 | FGF9_MOUSE | P54130 mus musculu |

| | | | | | | |
|----|-------|------|-----|---|------------|--------------------|
| 34 | 217 | 26.3 | 208 | 1 | FGF9_RAT | P36364 rattus norv |
| 35 | 213 | 25.8 | 209 | 1 | FGF9_XENLA | O91875 xenopus lae |
| 36 | 210.5 | 25.5 | 194 | 1 | FGF7_CANPA | P79150 canis famli |
| 37 | 210 | 25.4 | 211 | 1 | FGF7_HUMAN | O9np95 homo sapien |
| 38 | 209.5 | 25.4 | 194 | 1 | FGF7_MOUSE | P36363 mus musculu |
| 39 | 207.5 | 25.1 | 194 | 1 | FGF7_HUMAN | P21781 homo sapien |
| 40 | 207.5 | 25.1 | 194 | 1 | FGF7_SHEEP | P48808 ovis aries |
| 41 | 206.5 | 25.0 | 207 | 1 | FGF8_RAT | O54769 rattus norv |
| 42 | 205.5 | 24.9 | 207 | 1 | FGF8_HUMAN | O43320 homo sapien |
| 43 | 204.5 | 24.8 | 194 | 1 | FGF7_PIG | O9n198 sus scrofa |
| 44 | 203 | 24.6 | 208 | 1 | FGF4_HUMAN | O15520 homo sapien |
| 45 | 203 | 24.6 | 215 | 1 | FGF4_RAT | P70492 rattus norv |

ALIGNMENTS

RESULT 1
FGF2_HUMAN STANDARD; PRT; 155 AA.

AC P09038;
DT 01-NOV-1988 (Rel. 09, Created)
DT 01-NOV-1988 (Rel. 09, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Hepatin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Proscatropin).
GN FGF2 OR FGF9.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=87053817; PubMed=3780670;
RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Friedman J.,
RA Gospodarowicz D., Fiddes J.C.;
RT "Human basic fibroblast growth factor: nucleotide sequence and genomic organization.";
RL EMBO J. 5:2523-2528(1986).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=87217066; PubMed=3472745;
RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.;
RT "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells.";
RL Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=8713238; PubMed=3579930;
RA Sommer A., Brewer M.T., Thompson R.C., Moscarelli D., Presta M.,
RA Rifkin D.B.;
RT "A form of human basic fibroblast growth factor with an extended amino terminus.";
RL Biochem. Biophys. Res. Commun. 144:543-550(1987).
RN [4]
RP SEQUENCE FROM N.A.
RX MEDLINE=87162468; PubMed=2435575;
RA Kurokawa T., Saeada R., Iwane M., Igarashi K.;
RT "Cloning and expression of cDNA encoding human basic fibroblast growth factor.";
RL FEBS Lett. 213:189-194(1987).
RN [5]
RP SEQUENCE FROM N.A.
RX MEDLINE=89184522; PubMed=2538817;
RA Prate H., Kaghad M., Prate A.C., Klagebrun M., Lelias J.M.,
RA Lauzun P., Chalon P., Tauber J.P., Amelric F., Smith J.A.;
RT "High molecular mass forms of basic fibroblast growth factor are initiated by alternative CUG codons.";
RL Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989).
RN [6]
RP SEQUENCE OF 10-35.
RX MEDLINE=86275260; PubMed=3732516;

RA Gautschi P., Frater-Schroeder M., Boehlen P.;
 RT "Partial molecular characterization of endothelial cell mitogens from
 RT human brain: acidic and basic fibroblast growth factors.";
 RL FEBS Lett. 204:203-207(1986).
 [7]
 RN SEQUENCE OF 10-39.
 RP MEDLINE=86186784; PubMed=3964259;
 RX Gimenez-Galligo G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "Human brain-derived acidic and basic fibroblast growth factors:
 RT amino terminal sequences and specific mitogenic activities.";
 RL Biochem. Biophys. Res. Commun. 135:541-548(1986).
 [8]
 RN SEQUENCE OF 2-22.
 RP MEDLINE=87156686; PubMed=2435284;
 RX Story M.T., Esch F., Shimazaki S., Sasse J., Jacobs S.C., Lawson R.K.;
 RT "Amino-terminal sequence of a large form of basic fibroblast growth
 RT factor isolated from human benign prostatic hyperplastic tissue.";
 RL Biochem. Biophys. Res. Commun. 142:702-709(1987).
 [9]
 RN X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
 RP MEDLINE=91195367; PubMed=1707542;
 RX Eriksson A.E., Cousens L.S., Weaver L.H., Matthews B.W.;
 RT "Three-dimensional structure of human basic fibroblast growth
 RT factor.";
 RL Proc. Natl. Acad. Sci. U.S.A. 88:3441-3445(1991).
 [10]
 RN X-RAY CRYSTALLOGRAPHY (1.6 ANGSTROMS).
 RP MEDLINE=94004464; PubMed=7691311;
 RX Eriksson A.E., Cousens L.S., Matthews B.W.;
 RT "Refinement of the structure of human basic fibroblast growth factor
 RT at 1.6-A resolution and analysis of presumed heparin binding sites by
 RT separate substitution.";
 RL Protein Sci. 2:1274-1284(1993).
 [11]
 RN X-RAY CRYSTALLOGRAPHY (1.8 ANGSTROMS).
 RP MEDLINE=91195368; PubMed=1849658;
 RX Zhang J., Cousens L.S., Barr P.J., Sprang S.R.;
 RT "Three-dimensional structure of human basic fibroblast growth factor,
 RT a structural homolog of interleukin 1 beta.";
 RL Proc. Natl. Acad. Sci. U.S.A. 88:3446-3451(1991).
 [12]
 RN X-RAY CRYSTALLOGRAPHY (1.6 ANGSTROMS).
 RP MEDLINE=92121151; PubMed=1769963;
 RX Ago H., Kitagawa Y., Fujishima A., Matsura Y., Katsube Y.;
 RT "Crystal structure of basic fibroblast growth factor at 1.6-A
 RT resolution.";
 RL J. Biochem. 110:360-363(1991).
 [13]
 RN X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
 RP MEDLINE=91095983; PubMed=1702556;
 RX Zhu X., Komiya H., Chirino A., Faham S., Fox G.M., Arakawa T.,
 RT "Three-dimensional structures of acidic and basic fibroblast growth
 RT factors.";
 RL Science 251:90-93(1991).
 [14]
 RN STRUCTURE BY NMR.
 RP MEDLINE=97040521; PubMed=8885834;
 RX Moy F.J., Seddon A.P., Boehlen P., Powers R.;
 RT "High-resolution solution structure of basic fibroblast growth factor
 RT determined by multidimensional heteronuclear magnetic resonance
 RT spectroscopy.";
 RL Biochemistry 35:13552-13561(1996).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
 CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
 CC AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
 CC -----
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration

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 CC -----
 DR EMBL; M17599; AA52534.1; ALT_INIT.
 DR EMBL; X04431; CA28027.1; -
 DR EMBL; X04432; CA28028.1; -
 DR EMBL; X04433; CA28029.1; -
 DR EMBL; M27968; AA52448.1; -
 DR EMBL; J04513; AA52533.1; ALT_INIT.
 DR PIR; A25824; A25824.
 DR PIR; A26442; A26442.
 DR PIR; B24243; B24243.
 DR PIR; B24301; B24301.
 DR PIR; B32878; B32878.
 DR PIR; S00297; S00297.
 DR PDB; 2FGF; 15-APR-92.
 DR PDB; 4FGF; 15-JUL-93.
 DR PDB; 1FGA; 15-JUL-93.
 DR PDB; 1BFB; 03-APR-96.
 DR PDB; 1BFC; 03-APR-96.
 DR PDB; 1BFE; 16-JUN-97.
 DR PDB; 1BFG; 31-JAN-94.
 DR PDB; 2BFG; 30-APR-94.
 DR PDB; 1BLA; 08-NOV-96.
 DR PDB; 1BLD; 08-NOV-96.
 DR Genew; HGNC:3676; FGF2.
 DR MIM; 134920; -
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR PRODOM; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding;
 KW 3D-structure.
 FT PROPEP 1 9
 FT CHAIN 10 155
 FT SITE 46 48
 FT SITE 88 90
 FT BINDING 27 31
 FT BINDING 116 119
 FT STRAND 30 34
 FT TURN 35 38
 FT STRAND 39 43
 FT TURN 45 46
 FT STRAND 49 52
 FT TURN 55 56
 FT STRAND 58 60
 FT HELIX 62 66
 FT TURN 69 70
 FT STRAND 71 76
 FT TURN 77 80
 FT STRAND 81 85
 FT TURN 87 88
 FT STRAND 91 94
 FT HELIX 99 101
 FT STRAND 103 107
 FT TURN 109 110
 FT STRAND 113 117
 FT TURN 121 122
 FT STRAND 124 124
 FT STRAND 127 127
 FT TURN 129 130
 FT STRAND 132 133
 FT HELIX 136 138
 FT TURN 141 142
 FT HELIX 144 146
 FT STRAND 148 152
 CC HEPARIN-BINDING GROWTH FACTOR 2.
 CC CELL ATTACHMENT SITE (POTENTIAL).
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 CC HEPARIN (POTENTIAL).

Query Match 100.0%; Score 826; DB 1; Length 155;
 Best Local Similarity 100.0%; Pred. No. 1.2e-79;
 Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITTLPLPDDGSGAFPPGHPKPKLYCKNGGFFLRHPDGRVDDGVRKSPDH 60
 DB 1 MAAGSITTLPLPDDGSGAFPPGHPKPKLYCKNGGFFLRHPDGRVDDGVRKSPDH 60

QY 61 KLOLAEEERGVSIXGYCANRYLAMEKEDGRLLASKCVTDECFFPERLESNNYNTYRSRY 120
 DB 61 KLOLAEEERGVSIXGYCANRYLAMEKEDGRLLASKCVTDECFFPERLESNNYNTYRSRY 120

QY 121 TSMYVALKRTGQYKLGSKTGPQYALIFLPMASAKS 155
 DB 121 TSMYVALKRTGQYKLGSKTGPQYALIFLPMASAKS 155

RESULT 2
 FG2_BOVIN STANDARD; PRT; 155 AA.

AC P03969;
 DT 23-OCT-1986 (Rel. 02, Last sequence update)
 DT 23-OCT-1986 (Rel. 02, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Prostatropin) [Contains: Kidney-derived growth factor].
 GN FG2 OR FG2-2.
 OS Bos taurus (Bovine).
 OC Eukaryote; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae; Bovinae; Bos.
 OC NCBI_TaxID=9913;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=86261806; PubMed=2425435;
 RA Abraham J.A., Mergia A., Whang J.L., Tumolo A., Friedman J., Heriold K.A., Gospodarowicz D., Fiddes J.C.;
 RT "Nucleotide sequence of a bovine clone encoding the angiogenic protein, basic fibroblast growth factor";
 RL Science 233:545-548(1986).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=87217066; PubMed=3472745;
 RA Abraham J.A., Whang J.L., Tumolo A., Mergia A., Fiddes J.C.;
 RT "Human basic fibroblast growth factor: nucleotide sequence, genomic organization, and expression in mammalian cells";
 RL Cold Spring Harb. Symp. Quant. Biol. 51:657-668(1986).
 RN [3]
 RP SEQUENCE OF 10-155.
 RX MEDLINE=86016731; PubMed=3863109;
 RA Esch F., Baird A., Ling N., Ueno N., Hall F., Denoroy L., Klepper R., Gospodarowicz D., Boehlen P., Guillemin R.;
 RT "Primary structure of bovine pituitary basic fibroblast growth factor (FGF) and comparison with the amino-terminal sequence of bovine brain acidic FGF";
 RL Proc. Natl. Acad. Sci. U.S.A. 82:6507-6511(1985).
 RN [4]
 RP SEQUENCE OF 1-9.
 RX MEDLINE=86295737; PubMed=3741423;
 RA Ueno N., Baird A., Esch F., Ling N., Guillemin R.;
 RT "Isolation of an amino terminal extended form of basic fibroblast growth factor";
 RL Biochem. Biophys. Res. Commun. 138:580-588(1986).
 RN [5]
 RP SEQUENCE OF 25-41.
 RX MEDLINE=86095426; PubMed=4081126;
 RA Baird A., Esch F., Boehlen P., Ling N., Gospodarowicz D.;
 RT "Isolation and partial characterization of an endothelial cell growth factor from the bovine kidney: homology with basic fibroblast growth factor";

RL Regul. Pept. 12:201-213(1985).
 RN [6]
 RP SEQUENCE OF 21-40.
 RC TISSUE=Kidney;
 RX MEDLINE=87119165; PubMed=3809608;
 RA Ueno N., Baird A., Esch F., Shimasaki S., Ling N., Guillemin R.;
 RT "Purification and partial characterization of a mitogenic factor from bovine liver: structural homology with basic fibroblast growth factor";
 RL Regul. Pept. 16:135-145(1986).
 RN [7]
 RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
 RX MEDLINE=91095983; PubMed=1702556;
 RA Zhu X., Komiya H., Chirino A., Faham S., Fox G.M., Arakawa T., Hsu B.T., Rees D.C.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth factors";
 RL Science 251:90-93(1991).
 CC -I- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -I- SUBUNIT: MONOMER.
 CC -I- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES AFGP.
 CC -I- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC
 DR EMBL: M13440; AAA30518.1; -;
 DR PIR: A24663; GKB08.
 DR PIR: A24819; A24819.
 DR PIR: A32878; A32878.
 DR PDB: 1BAS; 3I-OCT-93.
 DR InterPro: IPR002209; HB/F growthfact.
 DR InterPro: IPR002348; IL1_HBGF.
 DR Pfam: PF00167; FGF; 1.
 DR PRINTS: PR00262; IL1HBGF.
 DR PRODOM: PD000831; HB/F growthfact; 1.
 DR SMART: SM00442; FGF; 1.
 DR PROSITE: PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding;
 KW 3D-structure.
 FT PROPEP 1 9
 FT CHAIN 10 155
 FT CHAIN 25 155
 FT SITE 46 48
 FT SITE 88 90
 FT BINDING 27 31
 FT BINDING 116 119
 FT STRAND 30 34
 FT STRAND 35 38
 FT STRAND 39 43
 FT STRAND 45 46
 FT STRAND 49 52
 FT STRAND 55 56
 FT STRAND 58 60
 FT STRAND 62 68
 FT STRAND 69 70
 FT STRAND 71 76
 FT TURN 77 80
 FT TURN 81 85
 FT TURN 87 88
 FT STRAND 91 94
 FT STRAND 99 101
 FT HELIX 103 107
 FT TURN 109 110

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FT STRAND 113 117
FT TURN 121 122
FT STRAND 124 124
FT STRAND 127 127
FT TURN 129 130
FT STRAND 133 133
FT TURN 136 138
FT TURN 141 142
FT TURN 144 146
FT STRAND 148 151
SQ SEQUENCE 155 AA; 17250 MW; BECE70FA6107129 CRC64;

Query Match 98.9%; Score 817; DB 1; Length 155;
Best Local Similarity 98.7%; Pred. No. 1.1e-78;
Matches 153; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAPPPGHPKPKLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAPPPGHPKPKLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
QY 61 KLQLOAERGVVSIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLQLOAERGVVSIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 TSMVVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMVVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 SSMVVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 3
FGF2_SHEEP STANDARD; PRT; 155 AA.
ID FGF2_SHEEP STANDARD; PRT; 155 AA.
AC P20003;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
DE growth factor) (HBGF) (Prostatropin).
GN FGF2 OR FGF-2.
OS Ovis aries (sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eumetazoa; Cephalochordata; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Ovis.
OC NCBI_TaxID=9940;
RN [1]
RN SEQUENCE FROM N.A.
RA Sution R., Ward W.G., Raphael K.A., Cam G.R.;
RA Submitted (SEP-1994) to the EMBL/Genbank/DBJ databases.
RP [2]
RP MEDLINE=88055577; PubMed=3678486;
RA Simpson R.J., Moritz R.L., Lloyd C.J., Fabri L.J., Nice E.C.,
RA Rubira M.R., Burgess A.W.;
RA "Primary structure of ovine pituitary basic fibroblast growth
RT factor.";
RT Factor 2; 224:128-132(1987).
RL FEBS Lett. 224:128-132(1987).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC ARGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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DR EMBL; L36136; AAA31519.1; -.
DR PIR; S00185; S00185.
DR HSSP; P09038; 1BFF.
DR InterPro; IPR002209; HB/F growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF_1.
DR PRINTS; PR00262; IL1HBGF.
DR ProDom; PD000831; HB/F growthfact; 1.
DR SMART; SM00442; FGF_1.
DR PROSITE; PS00247; HBGF_FGF_1.
KM Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 9
FT CHAIN 10 155
FT SITE 45 48 HEPARIN-BINDING GROWTH FACTOR 2.
FT SITE 87 90 CELL ATTACHMENT SITE (POTENTIAL).
FT BINDING 27 31 CELL ATTACHMENT SITE (POTENTIAL).
FT BINDING 116 119 HEPARIN (POTENTIAL).
SQ SEQUENCE 155 AA; 17280 MW; B5F2364BA610606D CRC64;

Query Match 98.2%; Score 811; DB 1; Length 155;
Best Local Similarity 98.1%; Pred. No. 4.7e-78;
Matches 152; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAPPPGHPKPKLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAPPPGHPKPKLYCKNGGFFLRIHPDGRVDGVREKSDPHI 60
QY 61 KLQLOAERGVVSIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
DB 61 KLQLOAERGVVSIKVCANRYLAKMEDGRLLASKCVTDECFEERLESNNYNTYRSRY 120
QY 121 TSMVVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 TSMVVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
DB 121 SSMVVALKRTGYKLGSKTGPQKAILFLPMSAKS 155

RESULT 4
FGF2_RAT STANDARD; PRT; 154 AA.
ID FGF2_RAT STANDARD; PRT; 154 AA.
AC P1109;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
DE growth factor) (HBGF) (Prostatropin).
GN FGF2 OR FGF-2.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eumetazoa; Rodentia; Sciurognathi; Muridae; Rattus.
OC NCBI_TaxID=10116;
RN [1]
RN SEQUENCE FROM N.A.
RA STRAIN=Sprague-Dawley; TISSUE=Ovary;
RA MEDLINE=89061721; PubMed=3196337;
RA Shimazaki S., Emoto N., Koba A., Mercado M., Shibata F.,
RA Cooksey K., Baird A., Ling N.;
RA "Complementary DNA cloning and sequencing of rat ovarian basic
RT fibroblast growth factor and tissue distribution study of its mRNA.";
RT Biochem. Biophys. Res. Commun. 157:256-263(1988).
RL [2]
RL SEQUENCE FROM N.A.
RA TISSUE=Brain;
RA MEDLINE=88262516; PubMed=3387229;
RA Kurokawa T., Seno M., Igarashi K.;
RA "Nucleotide sequence of rat basic fibroblast growth factor cDNA.";
RN [3]
RN Nucleic Acids Res. 16:5201-5201(1988).
RP SEQUENCE OF 1-28 FROM N.A.
RA STRAIN=Sprague-Dawley; TISSUE=Testis;
RX MEDLINE=97200905; PubMed=9046734;
RA Pauzourth K.B.S., Jin Y., Cattini P.A.;
RA "Cloning of the rat fibroblast growth factor-2 promoter region and
RT its response to mitogenic stimuli in glioma C6 cells.";
RT -----

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RL J. Neurochem. 68:998-908(1997).
RN [4]
RN SEQUENCE OF 35-154 FROM N.A.
RC STRAIN-Sprague-Dawley, TISSUE=Brain;
RX MEDLINE=92329546; PubMed=1378302;
RA El-Husseini A.B.-D., Paterson J.A., Myal Y., Shu R.P.C.;
RT "PCR detection of the rat brain basic fibroblast growth factor (bFGF)
RT mRNA containing a unique 3' untranslated region.";
RT Biochim. Biophys. Acta 1131:314-316(1992).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- TISSUE SPECIFICITY: FOUND IN ALL THE TISSUES EXAMINED.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC -----
DR EMBL; M22427; AAA4210.1; -
DR EMBL; X07285; CAA30265.1; -
DR EMBL; U78079; AAC53225.1; -
DR EMBL; X61697; CAA43863.1; -
DR PIR; S00876; S00876.
DR PIR; A31674; A31674.
DR HSSP; P09038; 1BFF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR PRINTS; PR00262; IL1HBGF.
DR PRODom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
DR PROPEP 1 9
FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 26 30 HEPARIN (POTENTIAL).
FT BINDING 115 118 HEPARIN (POTENTIAL).
SQ SEQUENCE 154 AA; 17139 MW; 1A0F14FP423D8403 CRC64;

Query Match 96.7%; Score 798.5; DB 1; Length 154;
Best Local Similarity 96.8%; Pred. No. 9.5e-77;
Matches 150; Conservative 4; Mismatches 0; Indels 1; Gaps 1;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLCYCKNGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITSLPLPEDGG-GAFPFGHFKDPKRLCYCKNGFFLRHPDGRVGVREKSDPHV 59

QY 61 KLOQAEERGVSVISKGVCANRYLAMKEDGRLLASKCVTDECFFPERLESNNYTYRSRKY 120
DB KLOQAEERGVSVISKGVCANRYLAMKEDGRLLASKCVTEECFFPERLESNNYTYRSRKY 119

QY 121 TSWVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 120 TSWVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 154

RESULT 5
FCF2_MOUSE STANDARD; PRT; 154 AA.
AC P15655;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast

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DE growth factor) (bFGF) (Prostatropin).
GN FGF2 OR FGF-2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RN SEQUENCE FROM N.A.
RX MEDLINE=9201563; PubMed=2318343;
RA Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.;
RT "Isolation of cDNAs encoding four mouse FGF family members and
RT characterization of their expression patterns during embryogenesis.";
RL Dev. Biol. 138:454-463(1990).
RN [2]
RN SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J, A/J, and NOD/LtJ; TISSUE=Spleen;
RA Ma R.Z., Teuscher C.;
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC AFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC -----
DR EMBL; M30644; AAA37621.1; -
DR EMBL; AF065903; AAC17503.1; -
DR EMBL; AF065904; AAC17504.1; -
DR EMBL; AF065905; AAC17505.1; -
DR PIR; C37360; C37360.
DR HSSP; P09038; 1BFF.
DR MGD; MG1:95516; Fgf2.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR PRINTS; PR00262; IL1HBGF.
DR PRODom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
DR Growth factor; Mitogen; Angiogenesis; Heparin-binding.
DR PROPEP 1 9
FT CHAIN 10 154 HEPARIN-BINDING GROWTH FACTOR 2.
FT BINDING 26 30 HEPARIN (POTENTIAL).
FT BINDING 115 118 HEPARIN (POTENTIAL).
SQ SEQUENCE 154 AA; 17153 MW; 689F677416274388 CRC64;

Query Match 94.9%; Score 783.5; DB 1; Length 154;
Best Local Similarity 94.8%; Pred. No. 3.6e-75;
Matches 147; Conservative 5; Mismatches 2; Indels 1; Gaps 1;

QY 1 MAAGSITTLPALPEDGSGAFPFGHFKDPKRLCYCKNGFFLRHPDGRVGVREKSDPHI 60
DB 1 MAAGSITSLPLPEDGGA-AFPFGHFKDPKRLCYCKNGFFLRHPDGRVGVREKSDPHV 59

QY 61 KLOQAEERGVSVISKGVCANRYLAMKEDGRLLASKCVTDECFFPERLESNNYTYRSRKY 120
DB KLOQAEERGVSVISKGVCANRYLAMKEDGRLLASKCVTEECFFPERLESNNYTYRSRKY 119

QY 121 TSWVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 155
DB 120 TSWVVALKRTGOYKLGSKTGPQKAILFLPMSAKS 154

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RESULT 6

FGF2_MONDO STANDARD; PRT; 156 AA.

AC P48798;
 DT 01-FEB-1996 (Rel. 33, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF) (Procatroptin).
 GN FGF2.
 OS Monodelphis domestica (Short-tailed grey opossum).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Metatheria; Didelphimorphia; Didelphidae; Monodelphis.
 OX NCBI_TaxID=13616;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=EYE;
 RX MEDLINE=94296558; PubMed=8024698;
 RA Kusewski D.F., Sabourin C.L.K., Sherburn T.E., Ley R.D.;
 RT "Characterization of cDNA encoding basic fibroblast growth factor of the marsupial Monodelphis domestica";
 RL DNA Cell Biol. 13:549-554(1994).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC -----
 DR EMBL; Z15154; CAAT8854.1; ALT_INIT.
 DR HSSP; P09038; 1BFF.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1
 FT CHAIN 10
 FT BINDING 28
 FT BINDING 117
 SQ SEQUENCE 156 AA; 17303 MW; 7B655FC49BF1209 CRC64;

Query Match 92.1%; Score 760.5; DB 1; Length 156;
 Best Local Similarity 92.9%; Pred. No. 5,4e-73;
 Matches 145; Conservative 5; Mismatches 5; Indels 1; Gaps 1;

QY 1 MAAGITTLPALPED-GSGGAFPPGHFKDPKRLCYCKNGGFFLRHPDGVDRKSDPH 59
 DB 1 MAAGITTLPALSDGGGGGAFPPGHFKDPKRLCYCKNGGFFLRHPDGVDRKSDPH 60
 QY 60 IKLQAEERGVSVIKGVCANRYLAKMEDGRLLASKCVTDECFERLESNNYTRSRK 119
 DB 61 IKLQAEERGVSVIKGVCANRYLAKMEDGRLLALKYVTECCFFERLESNNYTRSRK 120
 QY 120 YTSWVALKRTGQYKLGSTGTGQKAILFLPMSAKS 155
 DB 121 YSNWVALKRTGQYKLGSTGTGQKAILFLPMSAKS 156

RESULT 7

FGF2_CHICK STANDARD; PRT; 158 AA.

AC P4880;
 DT 01-FEB-1996 (Rel. 33, Created)
 DT 01-FEB-1996 (Rel. 33, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast growth factor) (BFGF).
 GN FGF2 OR FGF-2. (Chicken).
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.
 OX NCBI_TaxID=9031;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=93246053; PubMed=7683281;
 RA Borja A.Z., Zeller R., Meljers C.;
 RT "Expression of alternatively spliced bFGF first coding exons and antisense mRNAs during chicken embryogenesis";
 RL Dev. Biol. 157:110-118(1993).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES AFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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 CC -----
 DR EMBL; M95707; AAA4617.1; -.
 DR HSSP; P09038; 1BFF.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF; 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
 FT PROPEP 1
 FT CHAIN 13
 FT BINDING 30
 FT BINDING 119
 SQ SEQUENCE 158 AA; 17374 MW; 7B69B84C17F1816 CRC64;

Query Match 91.9%; Score 759; DB 1; Length 158;
 Best Local Similarity 92.2%; Pred. No. 1,4e-72;
 Matches 142; Conservative 5; Mismatches 7; Indels 0; Gaps 0;

QY 2 AAGSITTLPALPEDGSGGAFPPGHFKDPKRLCYCKNGGFFLRHPDGVDRKSDPH 61
 DB 5 AAGSITTLPALPDGGGAFPPGHFKDPKRLCYCKNGGFFLRHPDGVDRKSDPH 64
 QY 62 LQLOAEERGVSVIKGVCANRYLAKMEDGRLLASKCVTDECFERLESNNYTRSRK 121
 DB 65 LQLOAEERGVSVIKGVANRYLAKMEDGRLLALCATCECFERLESNNYTRSRK 124
 QY 122 SMWVALKRTGQYKLGSTGTGQKAILFLPMSAKS 155
 DB 125 DMWVALKRTGQYKLGSTGTGQKAILFLPMSAKS 158

RESULT 8

FGF2_RABIT


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ID  FG22_RABIT      STANDARD;      PRT;      137 AA.
AC  P48759;
DT  01-FEB-1996 (Rel. 33, Created)
DT  01-FEB-1996 (Rel. 33, Last sequence update)
DT  15-JUN-2002 (Rel. 41, Last annotation update)
DE  Heparin-binding growth factor 2 (HBGF-2) (Basic fibroblast growth
DE  factor) (BFGF) (Procatroptin) (Fragment).
GN  RGF2.
OS  Oryctolagus cuniculus (Rabbit).
OC  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC  Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX  NCBI_TaxId=9986;
RN  [1]
RP  SEQUENCE FROM N.A.
RC  STRAIN=New Zealand white, TISSUE=Smooth muscle;
RX  MEDLINE=93343209; PubMed=8342599;
RA  Winkles J.A., Friesel R., Alberts G.F., Janat M.F., Liao G.;
RT  "Elevated expression of basic fibroblast growth factor in an
RT  immortalized rabbit smooth muscle cell line.";
RL  Am. J. Pathol. 143:518-527(1993).
CC  -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC  IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC  VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC  CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC  -1- SUBUNIT: MONOMER.
CC  -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN MORE STRONGLY THAN DOES
CC  AFGF.
CC  -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC  or send an email to license@isb-sib.ch).
CC  -----
DR  EMBL; L12034; AAA31248.1; -.
DR  HSSP; P09038; 1BFF.
DR  InterPro; IPR002209; HB/F_growthfact.
DR  Pfam; PF00167; FGF, 1.
DR  PROSITE; PS00247; HBGF_FGF, 1.
DR  SMART; SM00442; FGF, 1.
DR  PROSITE; PS00247; HBGF_FGF, 1.
DR  Growth factor; Mitogen; Angiogenesis; Heparin-binding.
KM  BINDING 18 22 HEPARIN (POTENTIAL).
FT  BINDING 107 110 HEPARIN (POTENTIAL).
FT  NON_TER 137 137
SQ  SEQUENCE 137 AA; 15418 MW; 0D9E8A57B88E8C51 CRC64;

Query Match      89.3%; Score 738; DB 1; Length 137;
Best Local Similarity 99.3%; Pred. No. 1.8e-70;
Matches 136; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY  10 PALPEDGGGAGPPGHFKDPKRLKYNCGFFPLRIHPDGRVDGVRKSDPHIKQLQDAER 69
DB  1 PALPEDGGGAGPPGHFKDPKRLKYNCGFFPLRIHPDGRVDGVRKSDPHIKQLQDAER 60
QY  70 GVVSITKGVANRYLAKKEGRLLASCVTDECFEERLESNNNTYRSRKYTSWYALKR 129
DB  61 GVVSITKGVANRYLAKKEGRLLASCVTDECFEERLESNNNTYRSRKYTSWYALKR 120
QY  130 TGOYKLGSKTGPQKAI 146
DB  121 TGOYKLGSKTGPQKAI 137

RESULT 9
FGF2_XENLA      STANDARD;      PRT;      155 AA.
AC  P12256;
DT  01-OCT-1989 (Rel. 12, Created)
DT  01-JAN-1990 (Rel. 13, Last sequence update)

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DT  15-JUN-2002 (Rel. 41, Last annotation update)
DE  Heparin-binding growth factor 2 precursor (HBGF-2) (Basic fibroblast
DE  growth factor) (BFGF).
GN  RGF2 OR FGF-2.
OS  Xenopus laevis (African clawed frog).
OC  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC  Amphibia; Batrachia; Anura; Mesobatrachia; Pipidae; Pipidae;
OC  Xenopodinae; Xenopus.
OX  NCBI_TaxId=8355;
RN  [1]
RP  SEQUENCE FROM N.A.
RX  MEDLINE=89058621; PubMed=3194757;
RA  Kimmelman D., Abraham J., Haaparanta T., Pajasi T., Kirschner M.;
RT  "The presence of fibroblast growth factor in the frog egg: its role
RT  as a natural mesoderm inducer.";
RL  Science 242:1053-1056(1988).
RN  [2]
RP  SEQUENCE OF 95-155 FROM N.A.
RX  MEDLINE=88052890; PubMed=3479265;
RA  Kimmelman D., Kirschner M.;
RT  "Synergistic induction of mesoderm by FGF and TGF-beta and the
RT  identification of an mRNA coding for FGF in the early Xenopus
RT  embryo.";
RL  Cell 51:869-877(1987).
CC  -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC  -----
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CC  or send an email to license@isb-sib.ch).
CC  -----
DR  EMBL; M18067; AAA49726.1; -.
DR  PIR; A29618; A29618.
DR  PIR; A40117; A40117.
DR  HSSP; P09038; 1BFF.
DR  InterPro; IPR002209; HB/F_growthfact.
DR  InterPro; IPR002348; IL1_HBGF.
DR  Pfam; PF00167; FGF, 1.
DR  PRINTS; PR00262; IL1HBGF.
DR  PROSITE; PS00247; HB/F_growthfact; 1.
DR  SMART; SM00442; FGF, 1.
DR  PROSITE; PS00247; HBGF_FGF, 1.
DR  Growth factor; Mitogen; Angiogenesis; Heparin-binding.
KM  BINDING 10 9 HEPARIN-BINDING GROWTH FACTOR 2.
FT  CHAIN 1 9
FT  BINDING 27 31 HEPARIN (POTENTIAL).
FT  BINDING 116 119 HEPARIN (POTENTIAL).
FT  CONFLICT 111 111 MISSING (IN REF. 2).
SQ  SEQUENCE 155 AA; 17241 MW; 036735C8063142FD CRC64;

Query Match      83.2%; Score 687; DB 1; Length 155;
Best Local Similarity 83.9%; Pred. No. 4.8e-65;
Matches 130; Conservative 9; Mismatches 16; Indels 0; Gaps 0;

QY  1 MAAGSITLTPALPEDGGGAGPPGHFKDPKRLKYNCGFFPLRIHPDGRVDGVRKSDPHI 60
DB  1 MAAGSITLTPESBDGNGTTPFPGSFKDPKRLKYNCGFFPLRIHNSDGVDSGRDSDSHI 60
QY  61 KLQDAVERGVSTGVCANRYLAKKEGRLLASCVTDECFEERLESNNNTYRSRKY 120
DB  61 KLQDAVERGVSTGVCANRYLAKKEGRLLASCVTDECFEERLESNNNTYRSRKY 120
QY  121 TSWYALKRGTGOYKLGSKTGPQKAI 155
DB  121 TSWYALKRGTGOYKLGSKTGPQKAI 155

RESULT 10
FGF1_MESAU      STANDARD;      PRT;      155 AA.
ID  FGF1_MESAU

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AC P34004;
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (acidic fibroblast
DE growth factor) (AFGF).
GN FGF1 OR FGF-1.
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=90270291; PubMed=1693366;
RA Hall J.A., Harris M.A., Malair M., Mansson P.E., Zhou H., Harris S.E.,
RT "Characterization of the hamster DDT-1 cell afGF/HBGF-I gene and cDNA
RT and its modulation by steroids."
RL J. Cell. Biochem. 43:17-26(1990).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
CC THAN DOES BFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC PIR: A60721; A60721.
CC HSSP: P05230; 1RM1.
CC DR InterPro: IPR002209; HB/F growthfact.
CC DR InterPro: IPR002348; IL1_HBGF.
CC DR Pfam: PF00167; FGF_1.
CC DR PRINTS: PR00262; IL1HBGF.
CC DR ProDom: PD000831; HB/F growthfact; 1.
CC DR SMART: SM00442; FGF_1.
CC DR PROSITE: PS00247; HBGF_FGF_1.
CC KM Growth factor; Mitogen; Angiogenesis; Heparin-binding.
CC FT PROPEP 1 15
CC FT CHAIN 16 155
CC FT BINDING 24 28
CC FT BINDING 113 116
CC SQ SEQUENCE 155 AA; 17403 MW; 41E5EC760E412CC5 CRC64;

Query Match 50.7%; Score 418.5; DB:1; Length 155;
Best Local Similarity 54.8%; Pred. No. 7.1e-37;
Matches 86; Conservative 16; Mismatches 50; Indels 5; Gaps 2;

QY 1 MAAGSITTLPLPEDGGGAPPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHI 60
DB 1 MAEGITTFPSALTERFN--LPPGNKKPKLLYCSNGHFLRLIPDGVDRSDPHI 57
QY 61 KLOLAERGVVSIKVCANRYLAKMEDGRLLASKCVTDECFEFLRLENNYNTYRSRY 120
DB 58 QLOLSAESAGEYIKSTASGYLMDTNGLLYGSQTPNEBCLFLERLENNYNTYRSRY 117
QY 121 T--SWYVALKRTGYKLGSKTGPQKALIFLPM 155
DB 118 AEKNMFVGLKKNKSGCKRGPRTHYGQKALIFLPLPVSS 154

RESULT 11
FGF1 CHICK STANDARD; PRT; 155 AA.
AC P19596;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (acidic fibroblast
DE growth factor) (AFGF) (Alpha-endothelial cell growth factor).
GN FGF1 OR FGF-1.
OS Gallus gallus (Chicken).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;

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OC Gallus.
OX NCBI_TaxID=9031;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=91347925; PubMed=1715259;
RA Schumacher H., Risau W.,
RT "Differentiating and mature neurons express the acidic fibroblast
RT growth factor gene during chick neural development."
RL Development 111:1143-1154(1991).
RN [2]
RP SEQUENCE FROM N.A.
RA Martin G.R., Han J.K.;
RL Submitted (JUL-1995) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE OF 22-48.
RX MEDLINE=88296438; PubMed=3402441;
RA Risau W., Gutschel-Sova P., Boehlen P.;
RT "Endothelial cell growth factors in embryonic and adult chick brain
RT are related to human acidic fibroblast growth factor."
RL EMBO J. 7:959-962(1988).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
CC THAN DOES BFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC EMBL: S63263; AAB19629.1; -
CC DR EMBL: U31863; AAB80310.1; -
CC DR EMBL: S63261; AAD1942.1; -
CC DR PIR: S02639; S02639.
CC DR HSSP: P05230; 2AXM.
CC DR InterPro: IPR002209; HB/F growthfact.
CC DR InterPro: IPR002348; IL1_HBGF.
CC DR Pfam: PF00167; FGF_1.
CC DR ProDom: PD000831; HB/F growthfact; 1.
CC DR SMART: SM00442; FGF_1.
CC DR PROSITE: PS00247; HBGF_FGF_1.
CC KM Growth factor; Mitogen; Angiogenesis; Heparin-binding.
CC FT PROPEP 1 15
CC FT CHAIN 16 155
CC FT BINDING 22 155
CC FT BINDING 24 28
CC FT BINDING 113 116
CC SQ SEQUENCE 155 AA; 17322 MW; 8EDB70545E2B4365 CRC64;

Query Match 49.7%; Score 410.5; DB:1; Length 155;
Best Local Similarity 54.9%; Pred. No. 4.9e-36;
Matches 84; Conservative 20; Mismatches 44; Indels 5; Gaps 2;

QY 1 MAAGSITTLPLPEDGGGAPPPGHFKDPKRLYCKNGGFELRIHPDGRVDGVRKSDPHI 60
DB 1 MAEGITTFPSALTERFG--LPLGNKKPKLLYCSNGHFLRLIPDGVDRSDPHI 57
QY 61 KLOLAERGVVSIKVCANRYLAKMEDGRLLASKCVTDECFEFLRLENNYNTYRSRY 120
DB 58 QLOLSAESAGEYIKSTASGYLMDTNGLLYGSQTPNEBCLFLERLENNYNTYRSRY 117
QY 121 T--SWYVALKRTGYKLGSKTGPQKALIFLPM 151
DB 118 ADKNMFVGLKKNKSGCKRGPRTHYGQKALIFLPL 150

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RESULT 12
 FCFL1 HUMAN STANDARD; PRT; 155 AA.
 ID FCFL1_HUMAN P07502; P07502;
 AC P05230; P07502;
 DT 13-AUG-1987 (Rel. 05, Created)
 DT 13-AUG-1987 (Rel. 05, Last sequence update)
 DT 15-JUN-2002 (Rel. 41, Last annotation update)
 DE Heparin-binding growth factor 1 precursor (HBGF-1) (acidic fibroblast growth factor) (AFGF) (beta-endothelial cell growth factor) (ECGF-beta).
 DE FCFL1 OR FCFLA.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OC NCBI_TaxID=9606;
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=86261805; PubMed=3523756;
 RA O'Brien S.J., Howk R., Burgess W., Ricca G.A., Chiu I.-M., Ravera M.W., Wang W.P., Lehtoma K., Varban M.L., Prohan W.N.;
 RT "Human endothelial cell growth factor: cloning, nucleotide sequence, and chromosome localization.";
 RL Science 233:541-545(1986).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX TISSUE=Brain stem; PubMed=2474753;
 RA Wang W.P., Lehtoma K., Varban M.L., Krishnan I., Chiu I.M.;
 RT "Cloning of the gene coding for human class 1 heparin-binding growth factor and its expression in fetal tissues.";
 RL Mol. Cell. Biol. 9:2387-2395(1989).
 RN [3]
 RP SEQUENCE FROM N.A.
 RX TISSUE=Brain stem; PubMed=1693186;
 RA Chiu I.M., Wang W.P., Lehtoma K.;
 RT "Alternative splicing generates two forms of mRNA coding for human heparin-binding growth factor 1.";
 RL Oncogene 5:755-762(1990).
 RN [4]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=90073637; PubMed=2590193;
 RA Megjia A., Tischer E., Graves D., Tumolo A., Miller J.,
 RA Gospodarowicz D., Abraham J.A., Shipley G.D., Fiddes J.C.;
 RT "Structural analysis of the gene for human acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 164:1121-1129(1989).
 RN [5]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92019919; PubMed=1717925;
 RA Wang W.P., Quick D., Balcerzak S.P., Needleman S.W., Chiu I.M.;
 RT "Cloning and sequence analysis of the human acidic fibroblast growth factor gene and its preservation in leukemia patients.";
 RL Oncogene 6:1521-1529(1991).
 RN [6]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=92202857; PubMed=1372643;
 RA Li Y.L., Kna H., Golden J.A., Mischelisen A.A.J., Goetzl E.J.,
 RA Turk E.J.;
 RT "An acidic fibroblast growth factor protein generated by alternate splicing acts like an antagonist.";
 RL J. Exp. Med. 175:1073-1080(1992).
 RN [7]
 RP SEQUENCE OF 1-154 FROM N.A.
 RX MEDLINE=94069734; PubMed=7504343;
 RA Zhao X.M., Yeoh T.K., Hiebert M., Friest W.H., Miller G.G.;
 RT "The expression of acidic fibroblast growth factor (heparin-binding growth factor-1) and cytokine genes in human cardiac allografts and T cells.";
 RL Transplantation 56:1177-1182(1993).
 RN [8]
 RP SEQUENCE OF 1-40 FROM N.A.

RX MEDLINE=90365758; PubMed=2393407;
 RA Crumley G., Dionne C.A., Jaye M.;
 RT "The gene for human acidic fibroblast growth factor encodes two upstream exons alternatively spliced to the first coding exon.";
 RL Biochem. Biophys. Res. Commun. 171:7-13(1990).
 RN [9]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86296647; PubMed=2427112;
 RA Harper J.W., Strydom D.J., Lobb R.R.;
 RT "Human class 1 heparin-binding growth factor: structure and homology to bovine acidic brain fibroblast growth factor.";
 RL Biochemistry 25:4097-4103(1986).
 RN [10]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86295741; PubMed=3527167;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "The complete amino acid sequence of human brain-derived acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 138:611-617(1986).
 RN [11]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=87048871; PubMed=3778488;
 RA Gautschi-Sova P., Mueller T., Boehlen P.;
 RT "Amino acid sequence of human acidic fibroblast growth factor.";
 RL Biochem. Biophys. Res. Commun. 140:874-880(1986).
 RN [12]
 RP SEQUENCE OF 16-47.
 RX MEDLINE=86186784; PubMed=3964259;
 RA Gimenez-Gallego G., Conn G., Hatcher V.B., Thomas K.A.;
 RT "Human brain-derived acidic and basic fibroblast growth factors: amino terminal sequences and specific mitogenic activities.";
 RL Biochem. Biophys. Res. Commun. 135:541-548(1986).
 RN [13]
 RP SEQUENCE OF 16-49.
 RX MEDLINE=86275260; PubMed=3732516;
 RA Gautschi P., Frater-Schroeder M., Boehlen P.;
 RT "Partial molecular characterization of endothelial cell mitogens from human brain: acidic and basic fibroblast growth factors.";
 RL FEBS Lett. 204:203-207(1986).
 RN [14]
 RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS).
 RX MEDLINE=96194129; PubMed=8652550;
 RA Blaber M., Disalvo J., Thomas K.A.;
 RT "X-ray crystal structure of human acidic fibroblast growth factor.";
 RL Biochemistry 35:2086-2094(1996).
 RN [15]
 RP STRUCTURE BY NMR OF 24-155.
 RX MEDLINE=94358885; PubMed=7521397;
 RA Pineda-Lucena A., Jimenez M.A., Nieto J.L., Santoro J., Rico M., Gimenez-Gallego G.;
 RT "1H-NMR assignment and solution structure of human acidic fibroblast growth factor activated by inositol hexa sulfate.";
 RL J. Mol. Biol. 242:81-98(1994).
 RN [16]
 RP STRUCTURE BY NMR OF 24-155.
 RX MEDLINE=97107535; PubMed=8950275;
 RA Pineda-Lucena A., Jimenez M.A., Lozano R.M., Nieto J.L., Santoro J., Rico M., Gimenez-Gallego G.;
 RT "Three-dimensional structure of acidic fibroblast growth factor in solution: effects of binding to a heparin functional analog.";
 RL J. Mol. Biol. 264:162-178(1996).
 RN [17]
 RP STRUCTURE BY NMR OF 25-155.
 RX MEDLINE=98387896; PubMed=9719643;
 RA Lozano R.M., Jimenez M., Santoro J., Rico M., Gimenez-Gallego G.;
 RT "Solution structure of acidic fibroblast growth factor bound to 1,3,6-naphthalenesulfonate: a minimal model for the anti-tumoral action of suramin and suradistas.";
 RL J. Mol. Biol. 281:899-915(1998).
 CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.

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CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
CC THAN DOES BFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC -----
DR EMBL: M1361; AAA79245.1; -
DR EMBL: X51943; CAA36206.1; -
DR EMBL: M30492; AAA52446.1; -
DR EMBL: M30490; AAA52446.1; JOINED.
DR EMBL: M30491; AAA52446.1; JOINED.
DR EMBL: M60515; AAA51672.1; -
DR EMBL: M60516; AAA51673.1; -
DR EMBL: M23087; AAA52638.1; -
DR EMBL: M23086; AAA52638.1; JOINED.
DR EMBL: S67291; AAB29057.2; -
DR EMBL: X65778; CAA46661.1; -
DR PIR: A23553; A23553.
DR PIR: A24243; A24243.
DR PIR: A24301; A24301.
DR PIR: A24662; A24662.
DR PIR: A24820; A24820.
DR PIR: A26386; A26386.
DR PIR: A33665; A33665.
DR PIR: S18217; S18217.
DR PDB: 2ARF; 15-OCT-95.
DR PDB: 1AXM; 22-APR-98.
DR PDB: 2AXM; 22-APR-98.
DR PDB: 1RML; 11-NOV-98.
DR Genew: HGNC:3665; FGF1.
DR MIM: 131220; -
DR InterPro: IPR002209; HB/F growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF; 1.
DR PRINTS: PR00262; IL1HBGF.
DR ProDom: PD000831; HB/F growthfact; 1.
DR SMART: SM00442; FGF; 1.
DR PROSITE: PS00247; HBGF_FGF; 1.
DR Growth factor; Mitogen; Angiogenesis; Heparin-binding; Acetylation;
DR 3D-structure.
DR PROPEP 1 15
DR CHAIN 16 155 HEPARIN-BINDING GROWTH FACTOR 1.
DR MOD_RES 2 2 ACETYLATION.
DR BINDING 24 28 HEPARIN (POTENTIAL).
DR BINDING 113 116 HEPARIN (POTENTIAL).
DR SEQUENCE 155 AA; 17460 MW; F586E8BFB09F1580 CRC64;

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Query Match 49.6%; Score 409.5; DB 1; Length 155;
Best Local Similarity 54.1%; Pred. No. 6.3e-36;
Matches 85; Conservative 16; Mismatches 51; Indels 5; Gaps 2;

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ID FGF1 MOUSE STANDARD; PRT; 155 AA.
AC P10935;
DT 01-JUL-1989 (Rel. 11, Created)
DT 01-JUL-1989 (Rel. 11, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (acidic fibroblast
DE growth factor) (AFGF).
GN FGF1 OR FGF-1 OR FGFA.
OS Mus musculus (Mouse), and
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Euteria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090, 10116;
RN [1]
RP SEQUENCE FROM N.A.
RC SPECIES=Homo;
RX MEDLINE=89240051; PubMed=2470029;
RA Goodrich S., Yan G.C., Bahrenburg K., Mansson P.E.;
RT "The nucleotide sequence of rat heparin binding growth factor 1
RT (HBGF-1)".
RL Nucleic Acids Res. 17:2867-2867 (1989).
RN [2]
RP SEQUENCE FROM N.A.
RC SPECIES=Mouse;
RX MEDLINE=90201563; PubMed=2318343;
RA Hebert J.M., Basilico C., Goldfarb M., Haub O., Martin G.R.;
RT "Isolation of cDNAs encoding four mouse FGF family members and
RT characterization of their expression patterns during embryogenesis."
RL Dev. Biol. 138:454-463 (1990).
RN [3]
RP SEQUENCE FROM N.A.
RC SPECIES=Mouse;
RX MEDLINE=97128312; PubMed=8972905;
RA Madai F., Hackshaw K.V., Chiu I.M.;
RT "Cloning and characterization of the mouse Fgf-1 gene."
RL Gene 179:211-236 (1996).
RN [4]
RP SEQUENCE FROM N.A.
RC SPECIES=Mouse; STRAIN=BALB/c;
RX MEDLINE=97094746; PubMed=8939980;
RA Alam K.V., Frostholtm A., Hackshaw K.V., Evans J.E., Rotter A.,
RA Chiu I.M.;
RT "Characterization of the 1B promoter of fibroblast growth factor 1
RT and its expression in the adult and developing mouse brain."
RL J. Biol. Chem. 271:30263-30271 (1996).
CC -1- FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS
CC IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
CC VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
CC CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -----
CC -1- SUBUNIT: MONOMER.
CC -----
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -----
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CC or send an email to license@sib-sib.ch).
CC -----
DR EMBL: X14232; CAA32448.1; -
DR EMBL: M30641; AAA37618.1; -
DR EMBL: U36459; AAC52969.1; -
DR EMBL: U36457; AAC52969.1; JOINED.
DR EMBL: U36458; AAC52969.1; JOINED.
DR EMBL: U67610; AAC52907.1; -
DR PIR: S04147; S04147.
DR PIR: D37360; D37360.
DR HSSP: P05230; 1RML.
DR MGD: MGI:95515; Fgf1.
DR InterPro: IPR002209; HB/F growthfact.
DR InterPro: IPR002348; IL1_HBGF.
DR Pfam: PF00167; FGF; 1.

```

RESULT 13
FGF1_MOUSE

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DR PRINTS; PRO0262; ILHBGF.
DR Prodom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 15
FT CHAIN 16 155
FT BINDING 24 28
FT BINDING 113 116
FT BINDING 153 AA; 17418 MW; 8880E4PF0BA4161 CRC64;
SQ SEQUENCE

Query Match 49.0%; Score 404.5; DB 1; Length 155;
Best Local Similarity 53.5%; Pred. No. 2.1e-35;
Matches 84; Conservative 17; Mismatches 51; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGSGAPPPGHEKDPKRLCYKXNGFFLRHPDGRVDGVEKSDPHI 60
DB 1 MAEGITTFALTLEKFN--LPLGNKKPKPLLYCSNGHFLRLPGTVGTRDRSDQHI 57
QY 61 KIQLAEERGVVSIKVCANRYLAMKEDRLASKCVTDECFEELSENNTYTSRKX 120
DB 58 QQLSASVGEVYIKSTETGQYLAMDTGLYGSQTPNEECFLERLEBNHNTYTSKQ 117
QY 121 T--SWYALKRTGYLGSKTGPQKAILFLPM 155
DB 118 AEKNMFVGLKXGSCRGPRTHYGQKAILFLPM 154

RESULT 14
FGF1_PIG STANDARD; PRT; 152 AA.
AC P20002;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (Alpha-endothelial cell growth factor) (Fragment).
GN FGF1 OR FGF-1.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Heart;
RX MEDLINE=92062117; PubMed=1719973;
RA Schmidt M., Sharma H.S., Schott R.J., Schaper W.;
RT "Amplification and sequencing of mRNA encoding acidic fibroblast growth factor (afgf) from porcine heart."
RL Biochem. Biophys. Res. Commun. 180:853-859 (1991).
RN [2]
RP SEQUENCE OF 22-41.
RX MEDLINE=89231704; PubMed=2714282;
RA Quinkler W., Maasberg M., Bernotat-Danielowski S., Lueche N., Sharma H.S., Schaper W.;
RT "Isolation of heparin-binding growth factors from bovine, porcine and canine hearts."
RL Eur. J. Biochem. 181:67-73 (1989).
RN [3]
RP FUNCTION: THE HEPARIN-BINDING GROWTH FACTORS ARE ANGIOGENIC AGENTS IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND CONCENTRATION OF THESE 2 GROWTH FACTORS.
CC -1- SUBUNIT: MONOMER.
CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY THAN DOES BFGF.
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC -----
DR EMBL; X60317; CAA42869.1; -.
DR PIR; S03954; S03954.
DR HSSP; P05230; 2AXM.
DR InterPro; IPR002209; HB/F_growthfact.
DR Pfam; PF00167; FGF; 1.
DR Prodom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF; 1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KW Growth factor; Mitogen; Angiogenesis; Heparin-binding.
FT PROPEP 1 15
FT CHAIN 22 >152
FT BINDING 24 28
FT BINDING 113 116
FT CONFLICT 31 31
FT CONFLICT 39 39
FT NON TER 152 152
SQ SEQUENCE 152 AA; 17103 MW; AE853B0A92F9ABF4 CRC64;

Query Match 48.8%; Score 403.5; DB 1; Length 152;
Best Local Similarity 54.2%; Pred. No. 2.6e-35;
Matches 83; Conservative 17; Mismatches 46; Indels 5; Gaps 2;

QY 1 MAAGSITTLPALPEDGSGAPPPGHEKDPKRLCYKXNGFFLRHPDGRVDGVEKSDPHI 60
DB 1 MAEGITTFALTLEKFN--LPLGNKKPKPLLYCSNGHFLRLPGTVGTRDRSDQHI 57
QY 61 KIQLAEERGVVSIKVCANRYLAMKEDRLASKCVTDECFEELSENNTYTSRKX 120
DB 58 QQLSASVGEVYIKSTETGQYLAMDTGLYGSQTPNEECFLERLEBNHNTYTSKQ 117
QY 121 T--SWYALKRTGYLGSKTGPQKAILFLPM 151
DB 118 AEKNMFVGLKXGSCRGPRTHYGQKAILFLPM 150

RESULT 15
FGF1_BOVIN STANDARD; PRT; 155 AA.
AC P03568;
DT 23-OCT-1986 (Rel. 02, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DE Heparin-binding growth factor 1 precursor (HBGF-1) (Acidic fibroblast growth factor) (AFGF) (proestropin) (Endothelial cell growth factor) (beta and alpha chains) (Acidic eye-derived growth factor II) (EDGF II).
GN FGF1 OR FGF-1 OR FGPA OR HBGF-1 OR AFGF.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Retina;
RX MEDLINE=89083506; PubMed=3205724;
RA Halley C., Courtois Y., Laurent M.;
RT "Nucleotide sequence of bovine acidic fibroblast growth factor cDNA."
RL Nucleic Acids Res. 16:10913-10913 (1988).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Retina;
RX MEDLINE=89078619; PubMed=2849564;
RA Alterio J., Halley C., Brou C., Soussi T., Courtois Y., Laurent M.;
RT "Characterization of a bovine acidic FGF cDNA clone and its expression in brain and retina."
RL FEBS Lett. 242:41-46 (1988).
RN [3]
RP SEQUENCE OF 2-155.

```

RA MEDLINE=87016918; PubMed=5332107.
 RA Burgess W.H., Muhlman T., Marshak D.R., Fraser B.A., Maciag T.;
 RT "Structural evidence that endothelial cell growth factor beta is the
 RT precursor of both endothelial cell growth factor alpha and acidic
 RT fibroblast growth factor";
 RL Proc. Natl. Acad. Sci. U.S.A. 83:7216-7220(1986).
 RL [4]
 RP SEQUENCE OF 2-155.
 RX MEDLINE=87026586; PubMed=3768327;
 RA Crabb J.W., Arms L.G., Cair S.A., Johnson C.M., Roberts G.D.,
 RA Bordoli R.S., McKeehan W.L.;
 RT "Complete primary structure of prostastropin, a prostatic epithelial
 RT cell growth factor";
 RL Biochemistry 25:4988-4993(1986).
 RL [5]
 RP SEQUENCE OF 16-155.
 RX MEDLINE=86070224; PubMed=4071057;
 RA Glenez-Galligo G., Rodkey J., Bennett C., Rios-Candelore M.,
 RA Disalvo J., Thomas K.;
 RT "Brain-derived acidic fibroblast growth factor: complete amino acid
 RT sequence and homologies";
 RL Science 230:1385-1388(1985).
 RL [6]
 RP SEQUENCE OF 16-44, AND COMPOSITION.
 RX MEDLINE=86055750; PubMed=4065099;
 RA Boehlen P., Esch F., Baird A., Gospodarowicz D.;
 RT "Acidic fibroblast growth factor (FGF) from bovine brain:
 RT amino-terminal sequence and comparison with basic FGF";
 RL EMBO J. 4:1951-1956(1985).
 RN [7]
 RP SEQUENCE OF 16-56 FROM N.A.
 RX MEDLINE=86261806; PubMed=2425435;
 RA Abraham J.A., Mergia A., Wang J.L., Tunolo A., Friedman J.,
 RA Hjertild K.A., Gospodarowicz D., Fiddes J.C.;
 RT "Nucleotide sequence of a bovine clone encoding the angiogenic
 RT protein, basic fibroblast growth factor";
 RL Science 233:545-548(1986).
 RN [8]
 RP SEQUENCE OF 16-45.
 RX MEDLINE=89231704; PubMed=2714282;
 RA Ounkler M., Maasberg M., Bernotat-Danielowski S., Luethe N.,
 RA Sharma H.S., Schaper M.;
 RT "Isolation of heparin-binding growth factors from bovine, porcine and
 RT canine hearts";
 RL Eur. J. Biochem. 181:67-73(1989).
 RN [9]
 RP SEQUENCE OF 1-18 FROM N.A.
 RA Philippe J.M., Renaud P., Desset S., Laurent M.;
 RL Submitted (JUL-1992) to the EMBL/Genbank/DBJ databases.
 RN [10]
 RP X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
 RX MEDLINE=91095983; PubMed=1702556;
 RA Zhu X., Komiya H., Chirino A., Faham S., Fox G.M., Arakawa T.,
 RA Hsu B.T., Rees D.C.;
 RT "Three-dimensional structures of acidic and basic fibroblast growth
 RT factors";
 RL Science 251:90-93(1991).
 RL [11]
 RP FUNCTION: THE HEPARIN-BINDING-GROWTH FACTORS ARE ANGIOGENIC AGENTS
 RP IN VIVO AND ARE POTENT MITOGENS FOR A VARIETY OF CELL TYPES IN
 RP VITRO. THERE ARE DIFFERENCES IN THE TISSUE DISTRIBUTION AND
 RP CONCENTRATION OF THESE 2 GROWTH FACTORS.
 CC -1- SUBUNIT: MONOMER.
 CC -1- MISCELLANEOUS: THIS PROTEIN BINDS HEPARIN, ALTHOUGH LESS STRONGLY
 CC THAN DOES BFGF.
 CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
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CC      -
DR      EMBL; M13439; AAA30516.1; -
DR      EMBL; X13221; CAA31610.1; -
DR      EMBL; X14032; CAA32192.1; -
DR      EMBL; M35608; AAA30517.1; -
DR      EMBL; X66446; CAA47063.1; -
DR      EMBL; M97660; AAA30563.1; -
DR      EMBL; M97661; AAA30564.1; -
DR      PIR; A01385; GREOA.
DR      PIR; A25043; A25043.
DR      PIR; B25043; B25043.
DR      PIR; C25043; C25043.
DR      PIR; A24477; A24477.
DR      PIR; B24663; B24663.
DR      PIR; S02102; S02102.
DR      PDB; 1BAR; 3I-OCT-93.
DR      PDB; 1APC; 3I-OCT-93.
DR      InterPro; IPR002209; HB/F_growthfact.
DR      InterPro; IPR002348; IL1_HBGF.
DR      Pfam; PF00167; FGF; 1.
DR      PRINTS; PR00262; IL1HBGF.
DR      ProDom; PD000831; HB/F_growthfact; 1.
DR      SMART; SM00442; FGF; 1.
DR      PROSITE; PS00247; HBGF_FGF; 1.
KW      Growth factor; Mitogen; Angiogenesis; Heparin-binding; Acetylation;
KW      3d-structure.
FT      PROPEP      1      15
FT      CHAIN      2      155      ENDOTHELIAL CELL GROWTH FACTOR BETA.
FT      CHAIN      16      155      HEPARIN-BINDING GROWTH FACTOR 1.
FT      CHAIN      22      155      ENDOTHELIAL CELL GROWTH FACTOR ALPHA.
FT      MOD_RES      2      2      ACETYLTATION.
FT      BINDING      24      28      HEPARIN (POTENTIAL).
FT      BINDING      113     116      HEPARIN (POTENTIAL).
FT      STRAND      27      31
FT      TURN      32      34
FT      STRAND      37      40
FT      TURN      42      43
FT      STRAND      46      49
FT      HELIX      55      57
FT      STRAND      59      61
FT      STRAND      69      69
FT      STRAND      71      73
FT      STRAND      79      82
FT      TURN      84      85
FT      STRAND      87      91
FT      HELIX      96      98
FT      STRAND     100     100
FT      STRAND     103     104
FT      TURN     106     107
FT      STRAND     110     111
FT      STRAND     113     114
FT      TURN     116     121
FT      STRAND     123     123
FT      STRAND     126     126
FT      TURN     128     129
FT      STRAND     132     132
FT      STRAND     134     134
FT      HELIX     135     137
FT      TURN     140     141
FT      TURN     144     145
FT      STRAND     147     150
SQ      SEQUENCE 155 AA; 17493 MW; F636641F189F9BFD CRC64;

Query Match      47.6%; Score 393.5; DB 1; Length 155;
Best Local Similarity 52.2%; Pred. No. 3e-34;
Matches 82; Conservative 19; Mismatches 51; Indels 5; Gaps 2;

QY      1 MAAGSITLLPALPEDGGGAFPPGFHKDPKRLYCKNGGFFLRIHDDGRVDGVREKSDPHI 60
DB      1 MAEGETITLTATEKFN--LPLGNYKKPKLLYCSNGGYFLRIILDGTVDGTKRSDQHI 57
QY      61 KQLOAEEGVSTSGVCANRYLAKKEGGRLLASKCVDCECFPFRLSNNTYRSRKY 120

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Db 58 QQLCABSIGBYIKSTERGQFLAMDTDGLYGSTPNEECLFLERLEBNHYNTYISKCH 117

QY 121 TS--WVVALKRTGQYKLGSKRTGPGQKAILFLPMASAKS 155

Db 118 AEKHWFTVGLKXNGRSKLGPRTHFGQKAILFLPLPVSS 154

Search completed: December 16, 2002, 17:56:55
Job time : 9.5 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: December 16, 2002, 17:54:31 ; Search time 26 Seconds
(without alignments)
1228.358 Million cell updates/sec

Title: US-09-886-856-8
Perfect score: 826
Sequence: 1 MAAGSITTLPALPDGSGA.....GSKTGPGOKALFLPMKAKS 155

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_21.*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mnc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_virus:*
16: sp_bacteriaph:*
17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-------------|
| 1 | 826 | 100.0 | 196 | 4 | P78443 |
| 2 | 768 | 93.0 | 153 | 11 | Q925A3 |
| 3 | 742 | 89.8 | 170 | 11 | Q60487 |
| 4 | 704 | 85.2 | 155 | 13 | Q90Y92 |
| 5 | 682 | 82.6 | 130 | 6 | 077767 |
| 6 | 623 | 75.4 | 155 | 13 | Q80FR9 |
| 7 | 585 | 70.8 | 111 | 6 | Q98DX1 |
| 8 | 567 | 68.6 | 125 | 13 | Q98TD8 |
| 9 | 561 | 67.9 | 108 | 6 | Q9N1S7 |
| 10 | 490 | 59.3 | 109 | 11 | Q925A1 |
| 11 | 486 | 58.8 | 112 | 11 | Q925A2 |
| 12 | 476 | 57.6 | 101 | 13 | P79706 |
| 13 | 469.5 | 56.8 | 146 | 13 | Q07659 |
| 14 | 457 | 55.3 | 87 | 6 | Q8WMP4 |
| 15 | 341 | 41.3 | 76 | 6 | Q9NOV2 |
| 16 | 328 | 39.7 | 114 | 4 | Q16443 |

| | | | | | | |
|----|-------|------|-----|----|--------|---------------------|
| 17 | 328 | 39.7 | 114 | 4 | Q00527 | Q00527 homo sapien |
| 18 | 292 | 35.4 | 106 | 6 | Q9N1S8 | Q9N1S8 capreolus c |
| 19 | 251 | 30.4 | 208 | 11 | Q8R5L5 | Q8R5L5 ratius norv |
| 20 | 249 | 30.1 | 196 | 13 | Q9YH31 | Q9YH31 notophthalm |
| 21 | 245 | 29.7 | 124 | 13 | Q90XQ5 | Q90XQ5 ambystoma m |
| 22 | 239 | 28.9 | 245 | 11 | Q8R5L9 | Q8R5L9 ratius norv |
| 23 | 236 | 28.6 | 195 | 11 | Q8R5L6 | Q8R5L6 ratius norv |
| 24 | 229 | 27.7 | 206 | 13 | Q9YGD8 | Q9YGD8 oncorhynch |
| 25 | 224 | 27.1 | 111 | 13 | Q90XQ1 | Q90XQ1 ambystoma m |
| 26 | 217.5 | 26.3 | 201 | 13 | Q80Q59 | Q80Q59 ambystoma m |
| 27 | 216 | 26.2 | 208 | 6 | Q95L12 | Q95L12 sus scrofa |
| 28 | 213 | 25.8 | 191 | 13 | Q9DFC9 | Q9DFC9 brachydanio |
| 29 | 208 | 25.2 | 208 | 13 | Q9PYV1 | Q9PYV1 xenopus lae |
| 30 | 208 | 25.2 | 212 | 11 | Q9ESL9 | Q9ESL9 mus musculu |
| 31 | 205.5 | 24.9 | 207 | 11 | Q9ESL8 | Q9ESL8 mus musculu |
| 32 | 205.5 | 24.9 | 207 | 11 | Q9ERQ5 | Q9ERQ5 mus musculu |
| 33 | 204 | 24.7 | 212 | 11 | Q9EST9 | Q9EST9 ratius norv |
| 34 | 203 | 24.6 | 208 | 6 | Q95K97 | Q95K97 macaca fasc |
| 35 | 202.5 | 24.5 | 212 | 13 | Q42407 | Q42407 gallus gall |
| 36 | 200.5 | 24.3 | 301 | 5 | Q8T8A3 | Q8T8A3 ciona savig |
| 37 | 195.5 | 23.7 | 134 | 13 | Q90XQ3 | Q90XQ3 ambystoma m |
| 38 | 194.5 | 23.5 | 213 | 6 | Q9N1B9 | Q9N1B9 ovis aries |
| 39 | 193 | 23.4 | 208 | 4 | Q96P59 | Q96P59 homo sapien |
| 40 | 192 | 23.2 | 162 | 11 | Q8V179 | Q8V179 ratius norv |
| 41 | 191.5 | 23.2 | 186 | 6 | Q95L47 | Q95L47 mustela vis |
| 42 | 191 | 23.1 | 62 | 6 | Q8SP12 | Q8SP12 equus caball |
| 43 | 189.5 | 22.9 | 237 | 13 | Q91A16 | Q91A16 gallus gall |
| 44 | 189.5 | 22.9 | 247 | 11 | Q8R5L7 | Q8R5L7 ratius norv |
| 45 | 189 | 22.9 | 112 | 13 | Q90XQ9 | Q90XQ9 ambystoma m |

ALIGNMENTS

RESULT 1
ID P78443 PRELIMINARY: PRT: 196 AA.
AC P78443;
DT 01-MAY-1997 (TREMBLrel. 03, Created)
DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)
DE 21 kDa basic fibroblast growth factor (BFGF).
GN BFGF.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89184522; PubMed=2538817;
RA Prates H., Kagnad M., Prates A.C., Klagsbrun M., Leijas J.M.,
RA Liauzun P., Chalou P., Tauber J.P., Amalric F., Smith J.A., Caput D.,
RT "High molecular mass forms of basic fibroblast growth factor are
initiated by alternative CUG codons." ;
RL Proc. Natl. Acad. Sci. U.S.A. 86:1836-1840(1989).
RN [2]
RP SEQUENCE OF 81-168 FROM N.A.
RX MEDLINE=93038590; PubMed=1417798;
RA Watson R., Anthony F., Pickett M., Lambden P., Maeson G.M.,
RA Thomas B.U.;
RT "Reverse transcription with nested polymerase chain reaction shows
expression of basic fibroblast growth factor transcripts in human
granulosa and cumulus cells from in vitro fertilisation patients." ;
RL Biochem. Biophys. Res. Commun. 187:1227-1231(1992).
DR EMBL: J04513; AA5252.1; -.
DR EMBL: S47380; AADI3853.1; -.
DR HSSP: P09038; 1BFF.
DR InterPro: IPR002209; HB/F_growthfact.
DR InterPro: IPR002348; IIL_HBGF.
DR Pfam: PF00167; FGF_1.
DR PRINTS: PR00262; FTHBGF.
DR ProDom: PD00831; HB/F_growthfact; 1.
DR SMART: SM00442; FGF_1.

DR PROSITE; PS00247; HBG_FGF_1.
SQ SEQUENCE 196 AA; 21203 MW; D6B5447137B60343 CRC64;
Query Match 100.0%; Score 826; DB 4; Length 196;
Best Local Similarity 100.0%; Pred. No. 8,8e-82;
Matches 155; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MAAGSITLPLPEDGSGAPFPFGHFKDPRKRLYCKNGGFFLRHDPGRVGVREKSDPHI 60
DB 42 MAAGSITLPLPEDGSGAPFPFGHFKDPRKRLYCKNGGFFLRHDPGRVGVREKSDPHI 101
QY 61 KLOLOAERGVVSIKVCANRYLAKEDGRLLASCVTDECFEERLESNNYNTYRSRY 120
DB 102 KLOLOAERGVVSIKVCANRYLAKEDGRLLASCVTDECFEERLESNNYNTYRSRY 161
QY 121 TSWYVALKRTGYKLGSKTGPQKALFLPMSAKS 155
DB 162 TSWYVALKRTGYKLGSKTGPQKALFLPMSAKS 196

RESULT 2
Q925A3 PRELIMINARY; PRT; 153 AA.
AC Q925A3;
DT 01-DEC-2001 (Tremblrel. 19, Created)
DT 01-DEC-2001 (Tremblrel. 19, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Fibroblast growth factor 2.
GN FGF2.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N;
RA Dicks R.P., Gried A.E.;
RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
RT expressed in mouse embryos."
RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AY027551; AAK52308.1;
DR InterPro; IPR002209; HB/F_growthfact.
DR Pfam; PF00167; FGF_1.
DR Prodom; PD000831; HB/F_growthfact; 1.
SQ SEQUENCE 153 AA; 17024 MW; AD8163CDBFA2PAAB CRC64;

Query Match 93.0%; Score 768; DB 11; Length 153;
Best Local Similarity 94.2%; Pred. No. 1.3e-75;
Matches 146; Conservative 5; Mismatches 2; Indels 2; Gaps 2;

QY 1 MAAGSITLPLPEDGSGAPFPFGHFKDPRKRLYCKNGGFFLRHDPGRVGVREKSDPHI 60
DB 1 MAAGSITLPLPEDGSGAPFPFGHFKDPRKRLYCKNGGFFLRHDPGRVGVREKSDPHI 59
QY 61 KLOLOAERGVVSIKVCANRYLAKEDGRLLASCVTDECFEERLESNNYNTYRSRY 120
DB 60 KLOLOAERGVVSIKVCANRYLAKEDGRLLASCVTDECFEERLESNNYNTYRSRY 118
QY 121 TSWYVALKRTGYKLGSKTGPQKALFLPMSAKS 155
DB 119 TSWYVALKRTGYKLGSKTGPQKALFLPMSAKS 153

RESULT 3
Q60487 PRELIMINARY; PRT; 170 AA.
AC Q60487;
DT 01-NOV-1996 (Tremblrel. 01, Created)
DT 01-MAY-2000 (Tremblrel. 13, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Fibroblast growth factor 2 (FGF-2) (Fibroblast growth factor, basic)
DE (HBGF) (Heparin-binding growth factor 2) (HBGF-2) (Prostatorphin)
DE (Prostatic growth factor) (Fragments).

GN FGF2.
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE OF 53-170 FROM N.A.
RC TISSUE=PROSTATE;
RA Ricciardelli C.;
RL Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE OF N-TERMINUS, PARTIAL SEQUENCE, AND ALTERNATIVE SPLICING.
RX MEDLINE=9273588; PubMed=2730645;
RA Sommer A., Moscatelli D., Rifkin D.B.;
RT "An amino-terminally extended and post-translationally modified form
RT of a 25kd basic fibroblast growth factor";
RL Biochem. Biophys. Res. Commun. 160:1267-1274(1989).
RN [3]
RP PARTIAL SEQUENCE, AND METHYLATION.
RX MEDLINE=9132214; PubMed=1713785;
RA Burgess W.H., Bizik J., Mehlman T., Quarto N., Rifkin D.B.;
RT "Direct evidence for methylation of arginine residues in high
RT molecular weight forms of basic fibroblast growth factor.";
RL Cell Regul. 2:87-93(1991).
RN [4]
RP CHARACTERIZATION.
RX MEDLINE=87289686; PubMed=3475702;
RA Moscatelli D., Joseph-Silverstein J., Manejias R., Rifkin D.B.;
RT "Mr 25,000 heparin-binding protein from guinea pig brain is a high
RT molecular weight form of basic fibroblast growth factor.";
RL Proc. Natl. Acad. Sci. U.S.A. 84:5778-5782(1987).
CC -1- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTROPHIC
CC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC
CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND
CC HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOTACTANT FOR
CC MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION,
CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS
CC SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
CC ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
CC -1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFR1 AND AT LEAST
CC ONE HEPARAN SULFATE (BY SIMILARITY).
CC -1- ALTERNATIVE PRODUCTS: AT LEAST TWO ISOFORMS, 18 KDA AND 25 KDA
CC (SHOWN HERE); MAY BE PRODUCED BY USE OF ALTERNATIVE TRANSLATION
CC INITIATION SITES. BOTH FORMS ARE ACTIVE.
CC -1- PM: THE N-TERMINAL OF ISOFORM 18 KDA IS BLOCKED (PROBABLE).
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC -1- CAUTION: THIS IS A CONCEPTUAL TRANSLATION. MANY FRAMESHIFTS WERE
CC INTRODUCED FROM RESIDUES 77, 88, 93 AND 149 DOWNWARD TO EXTEND THE
CC SIMILARITY TO THE HUMAN SEQUENCE AS WELL AS ON THE BASIS OF
CC PARTIAL AMINO-ACID SEQUENCING.
DR EMBL; L75974; AAA85394.1; ALT_FRAME.
DR HSSP; P09038; 1BLA.
DR InterPro; IPR002209; HB/F_growthfact.
DR PRINTS; PR002348; IL1_HBGF.
DR Prodom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF_1.
DR PROSITE; PS00247; HBG_FGF_1.
KW Growth factor; Mitogen; Vascularization; Heparin-binding;
KW Alternative initiation; Methylation; Phosphorylation;
KW Developmental protein.
FT NON_TER 1
FT NON_CONS 15
FT CHAIN <1 170
FT CHAIN 22 170
FT INIT_MET 22 170
FT DOMAIN 11 14
FT NON_CONS 50 51
FT SITE 61 63
FT SITE 103 105
FT BINDING 50 51
FT BINDING 105 105

25 KDA BASIC FIBROBLAST GROWTH FACTOR.
18 KDA BASIC FIBROBLAST GROWTH FACTOR.
FOR 18 KDA FORM.
POLY-ALA.
CELL ATTACHMENT SITE (POTENTIAL).
CELL ATTACHMENT SITE (POTENTIAL).
HEPARIN (BY SIMILARITY).
HEPARIN (BY SIMILARITY).

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FT BINDING 143 159 HEPARIN (BY SIMILARITY).
FT MOD RES 4 4 METHYLATION (MONO- OR DI-).
FT MOD RES 6 6 METHYLATION (MONO- OR DI-).
FT MOD RES 8 8 METHYLATION (MONO- OR DI-).
FT MOD RES 8 8 PHOSPHORYLATION (BY SIMILARITY).
FT MOD RES 136 136 PHOSPHORYLATION (BY SIMILARITY).
SQ SEQUENCE 170 AA; 18354 MW; F36HBC7365FE8E CRC64;

Query Match 89.8%; Score 742; DB 11; Length 170;
Best Local Similarity 91.6%; Pred. No. 1e-72;
Matches 142; Conservative 3; Mismatches 4; Indels 6; Gaps 1;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYKNGGFLLRHPDGRVDGVRKSDPHI 60
DB 22 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYKNGGFLLRHPDGRVDGVRKSDPHI 75
QY 61 KLOQAERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 76 KLOQAERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 135
QY 121 TSWYVALKRTGYKLGSKTGPQOKAILFLPMSAKS 155
DB 136 SSWYVALKRTGYKLGSKTGPQOKAILFLPMSAKS 170

RESULT 4
Q00Y92 PRELIMINARY; PRT; 155 AA.
ID Q00Y92;
AC Q00Y92;
DT 01-DEC-2001 (Tremblrel. 19, Created)
DT 01-DEC-2001 (Tremblrel. 19, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Fibroblast growth factor-2.
GN FGF-2.
OS Cynops pyrrhogaster (Japanese common newt).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Caudata; Salamandridae; Cynops.
OC NCBI_Taxid=8330;
RN (1)
RP SEQUENCE FROM N.A.
RA Susaki K., Nakamura K., Chiba C., Saito T.;
RT "Expression of FGF2 during newt retinal development and
RT regeneration."
RL Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB064664; BAB63249.1;
DR InterPro; IPR002209; HB/F_growthfact.
DR Pfam; PF00167; FGF_1.
DR Prodom; PD000831; HB/F_growthfact; 1.
DR PROSITE; PS00247; HBGF_FGF; UNKNOWN; 1.
SQ SEQUENCE 155 AA; 17278 MW; 2B583058538ABBD9 CRC64;

Query Match 85.2%; Score 704; DB 13; Length 155;
Best Local Similarity 85.8%; Pred. No. 1.2e-68;
Matches 133; Conservative 9; Mismatches 13; Indels 0; Gaps 0;

QY 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYKNGGFLLRHPDGRVDGVRKSDPHI 60
DB 1 MAAGSITTLPALPEDGSGAFPPGHFKDPKRLCYKNGGFLLRHPDGRVDGVRKSDPHI 60
QY 61 KLOQAERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
DB 61 KLOQAERGVVSIKGVCANRYLAMKEDGRLASKCVTDECFEERLESNNYNTYRSRKY 120
QY 121 TSWYVALKRTGYKLGSKTGPQOKAILFLPMSAKS 155
DB 121 SSWYVALKRTGYKLGSKTGPQOKAILFLPMSAKS 155

RESULT 5
Q07767 PRELIMINARY; PRT; 130 AA.
ID Q07767;
AC Q07767;
DT 01-NOV-1998 (Tremblrel. 08, Created)

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DT 01-NOV-1998 (Tremblrel. 08, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)
DE Basic fibroblast growth factor (BFGF) (FGF-2) (Heparin-binding growth factor 2) (HBGF-2) (Prostatropin) (Prostatic growth factor) (Fragment).
DE (Fragment).
GN BFGF.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Euteria; Carnivora; Fissipedia; Canidae; Canis.
OC NCBI_Taxid=9615;
RN (1)
RP SEQUENCE FROM N.A.
RA TROCHTA O. A., JACOBS R. M., LAHARRE J.;
RT "The role of BFGF in canine Hemangiosarcoma."
RL Submitted (APR-1998) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: WIDE-SPECTRUM MITOGENIC, ANGIOGENIC, AND NEUROTROPHIC
CC FACTOR. IMPLICATED IN A MULTITUDE OF PHYSIOLOGIC AND PATHOLOGIC
CC PROCESSES, INCLUDING LIMB DEVELOPMENT, ANGIOGENESIS, WOUND
CC HEALING, AND TUMOR GROWTH. POTENT MITOGEN AND CHEMOATTRACTANT FOR
CC MESENCHYME-DERIVED CELLS. IMPLICATED IN THE DIFFERENTIATION,
CC PROLIFERATION, AND MAINTENANCE OF CELLS IN THE CENTRAL NERVOUS
CC SYSTEM AND IN BONE FORMATION. MAJOR ANGIOGENIC FACTOR THAT ALSO
CC ACTIVATES TUMOR NEOVASCULARIZATION (BY SIMILARITY).
CC -1- SUBUNIT: FORMS A QUATERNARY COMPLEX WITH TWO FGFRL AND AT LEAST
CC ONE HEPARIN SULFATE (BY SIMILARITY).
CC -1- SIMILARITY: BELONGS TO THE HEPARIN-BINDING GROWTH FACTORS FAMILY.
CC EMBL; AF060562; AAC35912.1; -.
DR HSSP; P09038; 1BFF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF_1.
DR PRINTS; PR00262; IL1HBGF.
DR Prodom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF_1.
DR PROSITE; PS00247; HBGF_FGF; 1.
KM Growth factor; Mitogen; Vascularization; Heparin-binding;
KW Phosphorylation; Developmental protein.
FT NON_TER 1 1
FT SITE 21 23 CELL ATTACHMENT SITE (POTENTIAL).
FT SITE 63 65 CELL ATTACHMENT SITE (POTENTIAL).
FT BINDING 10 11 HEPARIN (BY SIMILARITY).
FT BINDING 65 65 HEPARIN (BY SIMILARITY).
FT BINDING 103 119 HEPARIN (BY SIMILARITY).
FT BINDING 103 119 HEPARIN (BY SIMILARITY).
FT MOD RES 48 48 PHOSPHORYLATION (BY SIMILARITY).
FT MOD RES 96 96 PHOSPHORYLATION (BY SIMILARITY).
FT NON_TER 130 130
SQ SEQUENCE 130 AA; 14902 MW; 21900876E878FAEA CRC64;

Query Match 82.6%; Score 682; DB 6; Length 130;
Best Local Similarity 97.7%; Pred. No. 2.4e-66;
Matches 127; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 26 FKPKRLCYKNGGFLLRHPDGRVDGVRKSDPHIKLOQAERGVVSIKGVCANRYLAM 85
DB 1 FKPKRLCYKNGGFLLRHPDGRVDGVRKSDPHIKLOQAERGVVSIKGVCANRYLAM 60
QY 86 KEDGRLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKRTGYKLGSKTGPQOKA 145
DB 61 KEDGRLASKCVTDECFEERLESNNYNTYRSRKYTSWYVALKRTGYKLGSKTGPQOKA 120
QY 146 ILFLPMSAKS 155
DB 121 ILFLPMSAKS 130

RESULT 6
Q080F9 PRELIMINARY; PRT; 155 AA.
ID Q080F9;
AC Q080F9;
DT 01-JUN-2002 (Tremblrel. 21, Created)
DT 01-JUN-2002 (Tremblrel. 21, Last sequence update)
DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)

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DE Basic fibroblast growth factor.
GN FGF2.
OS Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;
OC Tetraodontidae; Takifugu.
OX NCBI_TaxID=31033;
RN (1)
RP SEQUENCE FROM N.A.
RA Botcherby M.R.;
RT "Comparative vertebrate genomic sequence analysis based on
RT Fugu rubripes."
RL Thesis (2001), University College London, London, United Kingdom.
DR EMBL; AJ426040; Uni9830.1; -
SQ SEQUENCE 155 AA; 17113 MW; ABEF12BDC78FBE CRC64;

Query Match 75.4%; Score 623; DB 13; Length 155;
Best Local Similarity 77.3%; Pred. No. 7.8e-60;
Matches 119; Conservative 5; Mismatches 30; Indels 0; Gaps 0;

QY 1 MAAGSITLPLPDDGGGAPFPQHPKRLCYKNGGFFRIHPDGRGVREKSDPHI 60
DB 1 MATGCTTTLSTPDDGGGFPSPKDPKRLCYKNGGFFRLISDGVADGTRKTDPHI 60
QY 61 KLOQAERGVVSIKGYCANRYLAKMKEDGRLASKCVTDECFPERLESNNYTRSRKY 120
DB 61 KLOQAATSVGEVVIKGYCANRYLAKMKEDGRLFGMKRATDECHFLERLESNNYTRSRKY 120
QY 121 TSMYVALKRTGQYKLGSKTGGQKAILFLPMSAK 154
DB 121 PNMEVGLTRTGNVRSKRTGQKAILFLPMSAK 154

RESULT 7
Q9BDX1 PRELIMINARY; PRT; 111 AA.
ID Q9BDX1
AC Q9BDX1;
DT 01-JUN-2001 (TEMBLrel. 17, Created)
DT 01-JUN-2001 (TEMBLrel. 17, Last sequence update)
DT 01-JUN-2002 (TEMBLrel. 21, Last annotation update)
DE Basic fibroblast growth factor (Fragment).
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecinae; Macaca.
OX NCBI_TaxID=9544;
RN (1)
RP SEQUENCE FROM N.A.
RA Sekhon H.S., Keller J.K., Spindel E.R.;
RT "Alterations in Collagen and Elastin Gene Expression in Peril
RT Pulmonary Vessels in Monkeys Following Prenatal Nicotine Exposure: A
RT Possible Role of alpha1 Nicotinic Acetylcholine Receptor in Persistent
RT Pulmonary Hypertension."
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF251270; AAK37962.1; -
DR HSSP; P09038; 2RGF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF_1.
DR PRINTS; PR00262; IL1HBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF_1.
DR PROSITE; PS00247; HBGF_FGF_1.
FT NON_TER 1 111
SQ SEQUENCE 111 AA; 12633 MW; EC0967A5261F5487 CRC64;

Query Match 70.8%; Score 585; DB 6; Length 111;
Best Local Similarity 100.0%; Pred. No. 6.3e-56;
Matches 111; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 43 IHPDGRVGVREKSDPHIKLOQAERGVVSIKGYCANRYLAKMKEDGRLASKCVTDECF 102

DB 1 IHPDGRVGVREKSDPHIKLOQAERGVVSIKGYCANRYLAKMKEDGRLASKCVTDECF 60
QY 103 FFERLESNNYTRSRKYTSMYVALKRTGQYKLGSKTGGQKAILFLPMSA 153
DB 61 FFERLESNNYTRSRKYTSMYVALKRTGQYKLGSKTGGQKAILFLPMSA 111

RESULT 8
Q98TD8 PRELIMINARY; PRT; 125 AA.
ID Q98TD8
AC Q98TD8;
DT 01-JUN-2001 (TEMBLrel. 17, Created)
DT 01-JUN-2001 (TEMBLrel. 17, Last sequence update)
DT 01-JUN-2002 (TEMBLrel. 21, Last annotation update)
DE Fibroblast growth factor-2 (Fragment).
GN FGF-2.
OS Cynops pyrrhogaster (Japanese common newt).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
OX NCBI_TaxID=8330;
RN (1)
RP SEQUENCE FROM N.A.
RA Mizuno N., Hayashi T., Konoh H., Okamoto M.;
RT "Cynops fibroblast growth factor-2."
RL Submitted (OCT-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB049625; BAB40835.1; -
DR HSSP; P09038; 1BFF.
DR InterPro; IPR002209; HB/F_growthfact.
DR InterPro; IPR002348; IL1_HBGF.
DR Pfam; PF00167; FGF_1.
DR PRINTS; PR00262; IL1HBGF.
DR ProDom; PD000831; HB/F_growthfact; 1.
DR SMART; SM00442; FGF_1.
DR PROSITE; PS00247; HBGF_FGF_1.
FT NON_TER 1 125
SQ SEQUENCE 125 AA; 14244 MW; 5C27F41DC6560C13 CRC64;

Query Match 68.6%; Score 567; DB 13; Length 125;
Best Local Similarity 87.1%; Pred. No. 7.2e-54;
Matches 108; Conservative 7; Mismatches 9; Indels 0; Gaps 0;

QY 32 LYCKNGGFFLRHPDGRVGVREKSDPHIKLOQAERGVVSIKGYCANRYLAKMKEDGRL 91
DB 2 LYCKNGGFFLRINSDDGVADGAREKSDSYIKLOQAERGVVSIKGYCANRYLAKMKEDGRL 61
QY 92 LASKCVTDECFPERLESNNYTRSRKYTSMYVALKRTGQYKLGSKTGGQKAILFLP 151
DB 62 MALKMTDECFPERLESNNYTRSRKYSDWYVALKRTGQYKLGSKTGGQKAILFLP 121

QY 152 SAKS 155
DB 122 SAKS 125

RESULT 9
Q9N1S7 PRELIMINARY; PRT; 108 AA.
ID Q9N1S7
AC Q9N1S7;
DT 01-OCT-2000 (TEMBLrel. 15, Created)
DT 01-OCT-2000 (TEMBLrel. 15, Last sequence update)
DT 01-JUN-2002 (TEMBLrel. 21, Last annotation update)
DE Basic fibroblast growth factor (Fragment).
GN BFGF.
OS Capreolus capreolus (roe deer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervoidae;
OC Cervidae; Odocoileinae; Capreolus.
OX NCBI_TaxID=9858;
RN (1)
RP SEQUENCE FROM N.A.
RA TISSUE=TESTIS;
RC MEDLINE=20532861; PubMed=11078967;

RA Wegener A., Bloetner S., Goritz F., Fickel J.;
 RT "Detection of growth factors in the testis of roe deer (Capreolus
 capreolus).";
 RL Anim. Reprod. Sci. 64:65-75 (2000).
 DR EMBL; AF152587; AAF73226.1; -.
 DR HSBP; P09038; 4FGF.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF, 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF, 1.
 DR PROSITE; PS00247; HBGF_FGF, 1.
 FT NON_TER 1 108
 FT 108
 SQ SEQUENCE 108 AA; 12399 MW; 68C7B7244214567E CRC64;

Query Match 67.9%; Score 561; DB 6; Length 108;
 Best Local Similarity 98.1%; Pred. No. 2.7e-53;
 Matches 106; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 42 RHHPGRVDGVEKSDPHIKLOLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDEC 101
 Db 1 RHHPGRVDGVEKSDPHIKLOLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDEC 60
 Qy 102 FFEERLESNNNTYRSKYSWVVALKRTGYKLGSKTGPQKAILFL 149
 Db 61 FFEERLESNNNTYRSKYSWVVALKRTGYKLGSKTGPQKAILFL 108

RESULT 10

Q925A1 PRELIMINARY; PRT; 109 AA.
 ID Q925A1
 AC Q925A1;
 DT 01-DEC-2001 (TRENBLrel. 19, Created)
 DT 01-DEC-2001 (TRENBLrel. 19, Last sequence update)
 DT 01-JUN-2002 (TRENBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2.
 GN FGF2.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 CX NCBI_Taxid=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=FVB/N;
 RA Dicks R.P., Griep A.E.;
 RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
 expressed in mouse embryos.";
 RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AY027558; AAK52310.1; -.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF, 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR PROSITE; PS00247; HBGF_FGF; UNKNOWN 1.
 DR DR
 SQ SEQUENCE 109 AA; 12388 MW; 61074A0E3303C860 CRC64;

Query Match 59.3%; Score 490; DB 11; Length 109;
 Best Local Similarity 97.9%; Pred. No. 1.4e-45;
 Matches 94; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 60 IKLOLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRK 119
 Db 14 IKLOLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRK 73
 Qy 120 YTSWVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
 Db 74 YTSWVALKRTGYKLGSKTGPQKAILFLPMSAKS 109

RESULT 11

Q925A2 PRELIMINARY; PRT; 112 AA.
 ID Q925A2
 AC Q925A2;
 DT 01-DEC-2001 (TRENBLrel. 19, Created)
 DT 01-DEC-2001 (TRENBLrel. 19, Last sequence update)
 DT 01-JUN-2002 (TRENBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2.
 GN FGF2.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 CX NCBI_Taxid=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=FVB/N;
 RA Dicks R.P., Griep A.E.;
 RT "Multiple novel variants of fibroblast growth factor 2 transcripts are
 expressed in mouse embryos.";
 RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AY027557; AAK52309.1; -.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF, 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR PROSITE; PS00247; HBGF_FGF; UNKNOWN 1.
 DR DR
 SQ SEQUENCE 112 AA; 12725 MW; B00557ABE0257C8B CRC64;

Query Match 58.8%; Score 486; DB 11; Length 112;
 Best Local Similarity 97.9%; Pred. No. 4e-45;
 Matches 93; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 61 KLOLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRK 120
 Db 18 KLOLAEEGVVSIKVCANRYLAMKEDGRLLASKCVTDECFFERLESNNNTYRSRK 77
 Qy 121 TSWVALKRTGYKLGSKTGPQKAILFLPMSAKS 155
 Db 78 TSWVALKRTGYKLGSKTGPQKAILFLPMSAKS 112

RESULT 12

P79706 PRELIMINARY; PRT; 101 AA.
 ID P79706
 AC P79706;
 DT 01-MAY-1997 (TRENBLrel. 03, Created)
 DT 01-MAY-1997 (TRENBLrel. 03, Last sequence update)
 DT 01-JUN-2002 (TRENBLrel. 21, Last annotation update)
 DE Basic FGF (Fragment).
 OS Cynops pyrrhogaster (Japanese common newt).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
 CX NCBI_Taxid=8330;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=EMBRYO;
 RA Suzuki A.S., Tabata T., Sakaguchi K., Takabatake T., Takehima K.,
 RA Kanada T.;
 RT "Serial expression of the genes in a mesodermalizing ectoderms of
 early Cynops gastrula.";
 RL Submitted (NOV-1996) to the EMBL/GenBank/DBJ databases.
 DR EMBL; D89443; BAA13958.1; -.
 DR HSBP; P09038; 4FGF.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF, 1.
 DR PRINTS; PR00262; IL1HBGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF, 1.
 DR PROSITE; PS00247; HBGF_FGF, 1.
 FT NON_TER 1 101
 FT 101
 SQ SEQUENCE 101 AA; 11907 MW; 74A16C866C1F457A CRC64;

Query Match 57.6%; Score 476; DB 13; Length 101;
 Best Local Similarity 87.1%; Pred. No. 4.3e-44;
 Matches 88; Conservative 7; Mismatches 6; Indels 0; Gaps 0;

QY 29 PKRLYCKKGGFFLRHPDGRVDGVAEKSDPHIKLOLAEBRGVSIKVCANRYLAMKED 88
 DB 1 PKRLYCKKGGFFLRINSKGGVAGAREKSDSYIKLOLAEBRGVSIKVCANRYLAMKED 60
 QY 89 GRLLASKCVTDECFEELLESNNNTYRSRKYSWYVALKR 129
 DB 61 GRLLALKMTDECFEELLESNNNTYRSRKYSWYVALKR 101

RESULT 13

007659 PRELIMINARY; PRT; 146 AA.
 AC 007659;
 DT 01-NOV-1996 (TReMBLrel. 01, Created)
 DT 01-NOV-1996 (TReMBLrel. 01, Last sequence update)
 DT 01-JUN-2002 (TReMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor.
 GN BFGF.
 OS Gallus gallus (Chicken).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
 OC Gallus.
 OX NCBI_TaxID=9031;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=93246053; PubMed=7683281;
 RA Borja A.Z., Zeller R., Meljers C.;
 RT "Expression of alternatively spliced bfgf first coding exons and
 RT antisense mRNAs during chicken embryogenesis.";
 RL Dev. Biol. 157:110-118(1993).
 RN [2]
 RP SEQUENCE OF 52-85 FROM N.A.
 RX MEDLINE=90382254; PubMed=2401202;
 RA Mitrani E., Gruenbaum Y., Shohat H., Ziv T.;
 RT "Fibroblast growth factor during mesoderm induction in the early chick
 RT embryo.";
 RL Development 109:387-393(1990).
 DR EMBL; X56804; AAA48616.1; -;
 DR HSP; P09038; 28FH.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF.1.
 DR PRINTS; PR00262; ILIHGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF.1.
 DR PROSITE; PS00247; HBGF_FGF.1.
 SQ SEQUENCE 146 AA; 16182 MW; A7CB97BCB456E247 CRC64;

Query Match 56.8%; Score 469.5; DB 13; Length 146;
 Best Local Similarity 65.3%; Pred. No. 3.5e-43;
 Matches 96; Conservative 9; Mismatches 15; Indels 27; Gaps 2;

QY 9 LPALPEDGSGAFPFGHFKDPKRLYCKKGGFFLRHPDGRVDGVAEKSDPHIKLOLAEE 68
 DB 27 VPSLSPDGGV-----LMEVRVPDERVAM-----VKLOLAEE 59
 QY 69 RGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEELLESNNNTYRSRKYSWYVALK 128
 DB 60 RGVVSIKVCANRYLAMKEDGRLLASKCVTDECFEELLESNNNTYRSRKYSWYVALK 119
 QY 129 RTGOYKLGSKTGPCOKAILFLPMSAKS 155
 DB 120 RTGOYKPGPKTGPCOKAILFLPMSAKS 146

RESULT 14
 Q8WMP4

ID Q8WMP4 PRELIMINARY; PRT; 87 AA.

AC Q8WMP4;
 DT 01-MAR-2002 (TReMBLrel. 20, Created)
 DT 01-MAR-2002 (TReMBLrel. 20, Last sequence update)
 DT 01-JUN-2002 (TReMBLrel. 21, Last annotation update)
 DE Fibroblast growth factor 2 (fragment).
 GN FGF2.
 OS Equus caballus (Horse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
 OX NCBI_TaxID=9796;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=ENDOMETRIUM;
 RA Einspanier R.;
 RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=ENDOMETRIUM;
 RA Welter H.;
 RL Thesis (2002), Department of Physiology, University of Munich,
 RL Freising, Germany.
 DR EMBL; AJ319906; GAC86028.1; -;
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF.1.
 DR PRINTS; PR00262; ILIHGF.
 DR ProDom; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF.1.
 DR PROSITE; PS00247; HBGF_FGF; UNKNOWN_1.
 FT NON_TER 1
 FT NON_TER 87
 SQ SEQUENCE 87 AA; 10128 MW; 52382DDF0245739E CRC64;

Query Match 55.3%; Score 457; DB 6; Length 87;
 Best Local Similarity 98.9%; Pred. No. 4.2e-42;
 Matches 86; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 41 LRHPDGRVDGVAERKSDPHIKLOLAEBRGVSIKVCANRYLAMKEDGRLLASKCVTDE 100
 DB 1 LRHPDGRVDGVAERKSDPHIKLOLAEBRGVSIKVCANRYLAMKEDGRLLASKCVTDE 60
 QY 101 CFFPERLESNNNTYRSRKYSWYVAL 127
 DB 61 CFFPERLESNNNTYRSRKYSWYVAL 87

RESULT 15

Q8NOV2 PRELIMINARY; PRT; 76 AA.
 AC Q8NOV2;
 DT 01-OCT-2000 (TReMBLrel. 15, Created)
 DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)
 DT 01-JUN-2002 (TReMBLrel. 21, Last annotation update)
 DE Basic fibroblast growth factor (fragment).
 GN FGF-2.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=FETAL PLACENTAL ARTERY;
 RA Zhang J., Tsol S.C., Magness R.R.;
 RT "Growth factor expression in ovine fetal placental artery endothelial
 RT cells.";
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF250027; AAF55566.1; -;
 DR HSP; P09038; 4FGF.
 DR InterPro; IPR002209; HB/F_growthfact.
 DR InterPro; IPR002348; IL1_HBGF.
 DR Pfam; PF00167; FGF.1.

DR PRINTS; PR00262; ILHBGF.
 DR PRODOM; PD000831; HB/F_growthfact; 1.
 DR SMART; SM00442; FGF; 1.
 DR PROSITE; PS00247; HBGF_FGF; 1.
 FT NON_TER 1
 FT NON_TER 76
 SQ SEQUENCE 76 AA; 8796 MW; 7D984E2F97453B20 CRC64;

Query Match 41.3%; Score 341; DB 6; Length 76;
 Best Local Similarity 88.0%; Pred. No. 1.4e-29;
 Matches 66; Conservative 1; Mismatches 0; Indels 8; Gaps 1;

QY 57 DPHKTLQQAEERGVSIKVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYR 116
 Db 1 DPHKTLQQAEERGVSIKVCANRYLAMKEDGRLASKCVTDECFPERLESNNYNTYR 60
 QY 117 SRKY-----TSW 123
 Db 61 SRKYSQVCGTETNW 75

Search completed: December 16, 2002, 17:57:55
 Job time : 27 secs